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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Proceeding	91193335
Party	Plaintiff Embarcadero Technologies, Inc.
Correspondence Address	MARTIN R GREENSTEIN TECHMARK A LAW CORPORATION 4820 HARWOOD RD, 2ND FLOOR SAN JOSE, CA 95124-5273 UNITED STATES MRG@TechMark.com, MPV@TechMark.com, AMR@TechMark.com
Submission	Testimony For Plaintiff
Filer's Name	Mariela P. Vidolova
Filer's e-mail	MRG@TechMark.com, MPV@TechMark.com, LZH@TechMark.com, AMR@TechMark.com
Signature	/Mariela P Vidolova/
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD**

**EMBARCADERO TECHNOLOGIES, INC.**

**Opposer**

v.

**RSTUDIO, INC.**

**Applicant.**

**Opposition No.: 91-193,335**

**Trademarks: RSTUDIO**

**Serial Nos.: 77/691,980**

**77/691,984**

**77/691,987**

**OPPOSER’S NOTICE OF FILING OF TRIAL TESTIMONY**

Please take notice that pursuant to Trademark Rule 2.125 (c) Opposer, EMBARCADERO TECHNOLOGIES, INC., (“Embarcadero”, or “Opposer”) is hereby filing electronically via the ESTTA system the deposition transcript of the trial testimony of Opposer’s witness Jason Tiret, taken on February 9, 2011 together with all associated exhibits.

Dated: April 13, 2011

Respectfully submitted,

EMBARCADERO TECHNOLOGIES, INC.

By /Martin R. Greenstein/

Martin R. Greenstein

Mariela P. Vidolova

Leah Z. Halpert

TechMark a Law Corporation

4820 Harwood Road, 2nd Floor

San Jose, CA 95124-5273

Tel: 408-266-4700; Fax: 408-850-1955

E-Mail: [MRG@TechMark.com](mailto:MRG@TechMark.com)

Attorneys for Opposer

**CERTIFICATE OF SERVICE**

I hereby certify that a true and correct copy of the foregoing **OPPOSER'S NOTICE OF FILING OF TRIAL TESTIMONY** is being served on April 13, 2011, by first class mail, postage prepaid on Applicant's Attorney of Record at his address below with a courtesy copy sent by e-mail to: [CEW@foleyhoag.com](mailto:CEW@foleyhoag.com), [JHuston@foleyhoag.com](mailto:JHuston@foleyhoag.com), [ARufo@foleyhoag.com](mailto:ARufo@foleyhoag.com):

Charles E. Weinstein, Esq.  
Julia Huston  
Joshua S. Jarvis  
Anthony E. Rufo  
FOLEY HOAG LLP  
155 Seaport Blvd, Ste 1600  
Boston, MA 02210-2600  
Tel: (617) 832-1000  
E-Mail: [CEW@foleyhoag.com](mailto:CEW@foleyhoag.com)

/Mariela P Vidolova/  
Mariela P. Vidolova

1 IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
2 BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD  
3

4 EMBARCADERO TECHNOLOGIES, INC. )  
5 Opposer, )  
6 vs. ) Opposition No.  
7 ) 91-193,335  
8 RSTUDIO, INC. )  
9 Applicant. )

10  
11  
12  
13  
14 DEPOSITION OF JASON TIRET  
15 VOLUME II

16 Date: February 9, 2011  
17 9:30 a.m.

18 Place: 4820 Harwood, 2nd Floor  
19 San Jose, California

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A P P E A R A N C E S

FOR THE OPPOSER:

TECHMARK A LAW CORPORATION  
BY: MARTIN R. GREENSTEIN, ESQ.  
4820 Harwood Road, 2nd Floor  
San Jose, CA 95124  
(408) 266-4700 Phone  
MRG@TechMark.com

FOR THE APPLICANT:

FOLEY HOAG LLP  
BY: ANTHONY E. RUFO, ESQ.  
155 Seaport Blvd., Ste 1600  
Boston, MA 02210-2600  
(617) 832-1000 Phone  
CEW@foleyhoag.com

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1 JASON TIRET,  
2 being first duly sworn by the Certified Shorthand  
3 Reporter to tell the truth, the whole truth and nothing  
4 but the truth, testified as follows:

5  
6 (Opposer's Exhibit 1 was marked for  
7 identification.)

8 MR. GREENSTEIN: I've had the court reporter  
9 premark as Exhibit 1 the notice of deposition.

10 MR. RUFO: Okay.

11 MR. GREENSTEIN: And just state on the record  
12 that we had agreed to extend the date till today because  
13 of weather-related situations back in the eastern half  
14 of the country outside of California, so that notice of  
15 deposition is still valid but with today's date.

16 MR. RUFO: Agreed. And I also want to get on  
17 the record that we have agreed that my appearance  
18 telephonically is agreeable to both parties.

19 MR. GREENSTEIN: Absolutely. And, again, I  
20 thank you for the courtesy of the stipulated extension  
21 on the serving of our pretrial disclosures.

22 MR. RUFO: Of course.

23 MR. GREENSTEIN: And obviously, if yours are  
24 coming up in a couple of weeks, we certainly would  
25 return the courtesy should you need that.

1 MR. RUFO: Great. I appreciate that.  
2 (Opposer's Exhibit 2 was marked for  
3 identification.)

4 MR. GREENSTEIN: The Exhibit 2 which I've had  
5 the court reporter mark is titled "Jason Tiret  
6 background testimony." Counsel and I have discussed  
7 this. This will be entered into the record as testimony  
8 that the witness Jason Tiret would give if asked, and  
9 we're doing it just for convenience and counsel retains  
10 full rights to object and cross-examine on all  
11 statements therein.

12 MR. RUFO: Agreed.

13

14 EXAMINATION

15 (Opposer's Exhibit 3 was marked for  
16 identification.)

17 BY MR. GREENSTEIN:

18 Q. Mr. Tiret, since we have the background stuff  
19 out of the way I will show you what's been marked  
20 Exhibit 3, which is the ER/Studio Data Architect user's  
21 guide and page 16 of a chart, and it's referred to in  
22 Exhibit 2 of your testimony. And could you just kind of  
23 explain what that chart is, how it relates to the  
24 ER/Studio line of products, and if it does, how it  
25 relates to application development software or

1 practices?

2 A. Okay. The picture here is a component view.

3 Q. Here being page 16 of --

4 A. Page 16 of the user guide. It's a component  
5 view of our application architecture. And what you see  
6 here is Data Architect in the center. It actually will  
7 interact with database management systems to reverse  
8 engineer. That's the exercise of visualizing the  
9 structure of the database.

10 It will forward engineer and generate code to  
11 build new databases and then it will compare and merge  
12 to synchronize the model with the database. We have a  
13 Repository server, and that's used to connect to the  
14 Repository database, which is used to store models,  
15 collaborate on the models.

16 We have actually a Business Architect, which is  
17 for process in conceptual modeling, and both of those  
18 will connect to the Repository server to be able to  
19 retrieve and make changes to the models that are in the  
20 Repository.

21 Q. Is the DBMS -- what does DBMS stand for?

22 A. So DBMS is database management system.

23 Q. Is DBMS part of the ER/Studio product line?

24 A. In the cylinder that's below the Studio Data  
25 Architect that would just be database systems that users

1 practices?

2 A. Okay. The picture here is a component view.

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22 A. So DBMS is database management system.

23 Q. Is DBMS part of the ER/Studio product line?

24 A. In the cylinder that's below the Studio Data  
25 Architect that would just be database systems that users

1 would build, develop, and manage. So that would not be  
2 technically part of our product. It would be what our  
3 customers are managing and developing and building.

4 Q. So there's no database sold under the brand E/R  
5 Studio; correct?

6 A. Well, no. There is. That's the Repository  
7 database, and that's where the V models are stored. So  
8 that's the one over on the right. That would be our  
9 database that would store the models, any information on  
10 the models as well.

11 Q. And does Embarcadero Technologies, which I'll  
12 refer to as Embarcadero in the future, have any other  
13 databases that it sells or database systems?

14 A. We do. We have other products like Performance  
15 Center that has a Repository to store statistics and  
16 metrics on the database -- databases that it's managing.  
17 I believe DB Optimizer, which is our SQL tuning, uses a  
18 Repository as well to store metrics and statistics and  
19 information on the SQL that it's going to tune, and then  
20 we have Innerbase itself, which is a database management  
21 system that developers can use if they're developing,  
22 you know, Delphi code or C++ code or Java code and they  
23 need a database to store information for their  
24 application, they can purchase Innerbase which would  
25 provide that for them.

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22 you know, Delphi code or C++ code or Java code and they  
23 need a database to store information for their  
24 application, they can purchase Innerbase which would  
25 provide that for them.

1 Q. And that's a general purpose database?

2 A. General purpose database similar to Oracle  
3 MySQL SQL server, obviously, different. It's not more  
4 lightweight but it's along those lines.

5 Q. And does the ER/Studio line of products work  
6 with a variety of other databases, third party  
7 databases?

8 A. Yes, we support probably 20 different database  
9 management systems; Oracle, SQL Server, MySQL, DB2.  
10 There's a couple different flavors of DB2, Teradata,  
11 Innerbase, Informix. And that's not all of them, but we  
12 support a variety of third part database platforms.

13 And so then there are some other things here on  
14 the component diagram here. We have the ER/Studio  
15 Portal that is used to present the models from the  
16 Repository.

17 Q. And here we're talking about Exhibit 3 still?

18 A. And it's used to present the models in the  
19 Repository through a web browser. We have the ER/Studio  
20 Metawizard, which is the import/export, and that allows  
21 the metadata or model information from ER/Studio Data  
22 Architect to be exported to third party products, other  
23 modeling tools that could be for data modeling, for  
24 software modeling, XML. There's a lot of other formats  
25 that people would like to get the metadata out to share

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22 Architect to be exported to third party products, other  
23 modeling tools that could be for data modeling, for  
24 software modeling, XML. There's a lot of other formats  
25 that people would like to get the metadata out to share

1 it with those tools.

2 And then something that's not depicted here is  
3 you'll see Software Architect. That right now just  
4 doesn't integrate with the Repository. That's why it's  
5 not pictured here.

6 Q. What does ER/Studio Software Architect do?

7 A. ER/Studio Software Architect is our UML  
8 modeling tool that's used for visualizing and designing  
9 software applications that would be built in in a  
10 variety of different languages.

11 Q. This is application development software?

12 A. Application development software, yes.

13 Q. Is that also what's called an Integrated  
14 Development Environment or IDE?

15 A. Yes, it could be thought of that, yes.

16 (Opposer's Exhibit 4 was marked for  
17 identification.)

18 BY MR. GREENSTEIN:

19 Q. Thank you. I'll show you what I think has been  
20 premarked Exhibit 4, which is a press release dated May  
21 7, 2008, and ask if you can, first of all, identify  
22 that. Is that an Embarcadero press release from the  
23 Embarcadero web site?

24 A. Yes, it is.

25 Q. And what is that press release doing or

1 announcing?

2 A. This press release is announcing Embarcadero's  
3 acquisition of CodeGear, which was a division of  
4 Borland, and they specialized in application development  
5 tools like Delphi, JBuilder, Innerbase. The database  
6 server was one of their products. And we acquired them  
7 to just broaden the tools that we can sell to our  
8 customers from just, you know, traditional Embarcadero  
9 tools were just on the database management and  
10 development side. And these gave us a lot of the  
11 application development, so more of the I guess it would  
12 be the front end applications that would be presented to  
13 end users.

14 Q. What's the relationship between the ER/Studio  
15 database products and the tools and are they sold to the  
16 same customers? Why would they acquire CodeGear?

17 A. They would be developed or sold to the same  
18 customers. So we have -- the developers could be either  
19 application developers, database developers, or both.  
20 And we've in the past before did acquisition we just  
21 sold primarily to database developers, but that has  
22 expanded out to application developers. It just was a  
23 logical fit for our company and that gave us the tools  
24 like RAD Studio that would do the development there.

25 Q. Is there some logical connection between the

1 announcing?

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3 acquisition of CodeGear, which was a division of  
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21 sold primarily to database developers, but that has  
22 expanded out to application developers. It just was a  
23 logical fit for our company and that gave us the tools  
24 like RAD Studio that would do the development there.

25 Q. Is there some logical connection between the

1 database and the database modeling products and the  
2 database management products and the application  
3 development products?

4 A. Yes. I mean you have applications and  
5 typically they have information that needs to be stored  
6 somewhere to be accessed later on. And the most  
7 logical, best way to do that is in a database. So the  
8 application development and database development go hand  
9 in hand. So much so we actually bundle a version of  
10 ER/Studio which is ER/Studio Developer Edition with RAD  
11 Studio which is our application development tool that  
12 develops C++ and Delphi programs.

13 Q. When you say you bundle a version of ER/Studio  
14 is that one ER/Studio product or a series of ER/Studio  
15 products in the bundle?

16 A. It is ER/Studio Data Architect that is bundled.

17 Q. And when Embarcadero sells these products do  
18 they go out and try to sell both the database end of the  
19 business and the application tools end of the business  
20 to the same clients?

21 A. Absolutely. I would say the customer bases may  
22 have been more different. Application developers are  
23 different than database developers, but the logic behind  
24 acquisition was so we could sell both to both. We  
25 wanted to take the database tools and sell it to the

1 application developer crowd as well as the application  
2 development tools and sell it to the database crowd.  
3 And that's one of the reasons why we saw the acquisition  
4 as such a good fit for the company.

5 Q. In your experience in the industry do other  
6 competitors also try to do this?

7 A. Yeah, definitely. We have competitors like  
8 Sybase PowerDesigner, which try and market to  
9 application developers, data modelers, database  
10 developers, enterprise architect, the whole kind of  
11 software life cycle type of thing.

12 Q. You say the software life cycle. You mean life  
13 cycle from database design and development through  
14 applications or --

15 A. Well, it would be the life cycle of each of  
16 those. So they might have -- be built together and  
17 managed together or they might even be built separately  
18 into different groups if it's a very large organization,  
19 but yes.

20 (Opposer's Exhibit 5 was marked for  
21 identification.)

22 BY MR. GREENSTEIN:

23 Q. Okay. Thank you. I'll show you what's been  
24 marked Exhibit 5 which also appears to be a page from  
25 the Embarcadero web site and ask if you can recognize it

1 and then explain what that is?

2 A. This is a list of all of the products that we  
3 sell to our customers, and we have them separated into  
4 groups here. A lot of times those might be different  
5 groups within a large organization or they may be the  
6 same group in smaller organizations. It really depends  
7 on the organization itself. But we sell these to  
8 customers in different industries, whatever data and  
9 applications they need to develop.

10 Q. And are these all sold from the same web site,  
11 embarcadero.com, or do you have different web sites for  
12 database and applications?

13 A. They're all sold together and they're all sold  
14 by the direct sales as well, but yeah, they're all sold  
15 on our shop site and then some of these products are  
16 available on third party software sale.

17 Q. By "our shop site" you mean the on-line store?

18 A. Yeah, the Embarcadero store.

19 Q. So Embarcadero doesn't distinguish the sales  
20 channel for the different products?

21 A. No.

22 Q. And those categories again from Exhibit 5  
23 are --

24 A. We have design and architecture tools, which is  
25 where the ER/Studio product family would fit. We have

1 application development, which is where the RAD Studio,  
2 Delphi -- Delphi Prism, PHP, 3rd Rail, all those other  
3 IVEs for application development.

4 We've got database management and development  
5 and performance optimization. And we have bundles that  
6 kind of go across these as well. All Access is a  
7 product that we sell that actually incorporates editions  
8 of all of these products. So they would be bundled  
9 together and targeted for one specific user.

10 Q. So there are customers that buy the entire  
11 line?

12 A. Absolutely, yeah. All Access is -- it was  
13 launched in, I believe, early 2009 and it's been a  
14 pretty successful product because smaller companies that  
15 have people that do the database development, the  
16 application development, monitoring performance  
17 optimization, they can get all of our products at a nice  
18 entry price.

19 Q. So this lets them design and develop a database  
20 and then build applications using the database?

21 A. Yes, it would give them the full kind of  
22 spectrum of tools.

23 (Opposer's Exhibit 6 was marked for  
24 identification.)

25 BY MR. GREENSTEIN:

1 application development, which is where the RAD Studio,  
2 Delphi -- Delphi Prism, PHP, 3rd Rail, all those other  
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18 entry price.

19 Q. So this lets them design and develop a database  
20 and then build applications using the database?

21 A. Yes, it would give them the full kind of  
22 spectrum of tools.

23 (Opposer's Exhibit 6 was marked for  
24 identification.)

25 BY MR. GREENSTEIN:

1 Q. Thank you. Now I'll show you Exhibit 6, which  
2 is a group exhibit of 19 pages comprising -- you can  
3 explain it, but it says they're data sheets for a series  
4 of ER/Studio products and ask if you can kind of  
5 generally talk about what those are and then take a  
6 couple minutes on each of the products in the line and  
7 tell us what the difference is and how they're used.

8 A. Okay.

9 MR. RUFO: Can we just -- I don't want to enter  
10 a formal objection, Marty, but can you just please ask  
11 the witness to authenticate the documents before he  
12 speaks about them?

13 MR. GREENSTEIN: Absolutely.

14 BY MR. GREENSTEIN:

15 Q. Please explain where these came from, if you  
16 know, and whether you're familiar with them before  
17 today.

18 A. I am familiar with these. These are data  
19 sheets that are available on our web site and they  
20 describe our product family at a high level.

21 Q. And, in fact, did you draft or help or  
22 participate in the drafting of the language of these?

23 A. I did help. Typically, our product marketing  
24 team would produce these, but I had a heavy influence in  
25 the content on there in terms of reviewing and the

1 accuracy and the language.

2 Q. And what is a data sheet, and they're typically  
3 two pages. I think one is three pages. Who are they  
4 intended for?

5 A. The data sheet is to provide a quick view of  
6 what our products do, the benefits of them for users  
7 that just want a quick summary of what each product is.

8 Q. Is it kind of seller information sheets?

9 A. Seller information, so people that are  
10 interested in the products will look at the data sheet  
11 to get the first level of information about the  
12 products.

13 So this data sheet here we have ER/Studio XE  
14 data sheet, which is a bundle that we sell under the  
15 ER/Studio brand. It encompasses several products. We  
16 have Business Architect, which is the process and  
17 conceptual modeling more for enterprise architecture.  
18 We have --

19 Q. These are ER/Studio Business Architect?

20 A. Yeah, ER/Studio Business Architect, ER/Studio  
21 Data Architect, which is for logical and physical data  
22 modeling. We have ER/Studio Software Architect, which  
23 is for UML modeling and application development. We  
24 have the ER/Studio Repository, which is where the models  
25 are stored, and we have ER/Studio Portal, which is a

1 browser --

2 MR. RUFO: I can no longer hear you.

3 MR. GREENSTEIN: Can you hear us now?

4 MR. RUFO: I can.

5 MR. GREENSTEIN: We'll try to speak up again.

6 THE WITNESS: We have ER/Studio Portal, which  
7 is a browser interface into the models that are stored  
8 in the Repository. And then we have ER/Studio  
9 Metawizard, which is used to integrate the metadata from  
10 ER/Studio Data Architect out to third party products.

11 BY MR. GREENSTEIN:

12 Q. Now, in the ER/Studio line are these geared to  
13 a specific industry or general application use?

14 A. These are for general application use. We --  
15 anybody that needs a database, that needs to design or  
16 develop the database would leverage our tools, and with  
17 the addition of Software Architect that brought in the  
18 application development piece that they can design and  
19 develop the application code that would sit on top of  
20 the database.

21 So that we're not selling to any specific  
22 industries. It goes -- our customers are health care,  
23 insurance, financial services, telecom, software  
24 companies themselves that are building products for  
25 other companies, technology companies. It's really

1 across all industries.

2 Q. Is there any limitation or restriction on the  
3 types of data that companies can put into these  
4 databases they build or what types of products they  
5 build using the ER/Studio product line?

6 A. No, there's no restrictions at all. It's  
7 whatever they want to develop.

8 Q. Do you, in fact, know specifically what each  
9 client does with each product?

10 A. We have a general idea. Obviously, in Data  
11 Architect they're doing data modeling. In Business  
12 Architect they're doing process modeling. But they can  
13 use it to their own devices.

14 Q. But you don't know necessarily what the data is  
15 and what kind of reports or what kind of operations they  
16 perform on the data? That's something that they do?

17 A. Yeah, it's something that they do. So it could  
18 be just normal transactions. It could be data  
19 warehouses that would be used to summarize and analyze  
20 and present statistics on performance metrics for, you  
21 know, how their companies or how products are selling.  
22 It really could be anything.

23 Q. Okay. I'm looking at the group exhibit 6. The  
24 ER/Studio XE is the first two pages. What are the next  
25 two pages?

1           A.    So we have ER/Studio XE and that's the latest  
2 bundle that we're selling.

3           Q.    And that's two pages?

4           A.    That's two pages.  The next two page are  
5 ER/Studio Enterprise, and it's actually very similar to  
6 XE.  XE just adds the Metawizard component and some  
7 licensing enablement capabilities, but ER/Studio  
8 Enterprise includes ER/Studio Business Architect,  
9 ER/Studio Data Architect, ER/Studio Software Architect,  
10 and then the Repository and the portal.  So that  
11 includes a lot of the functionality that XE has.

12                   The next one, and that's the next two pages, is  
13 the ER/Studio Data Architect, and this is where  
14 customers would model, design, or develop the databases  
15 that they're building for their applications.  And  
16 there's a lot of ways to communicate the models out  
17 through reports and other functionality.

18                   The next one is ER/Studio Software Architect  
19 and this is used for application development, and you  
20 have -- use cases that you're going to model of how  
21 people are going to use the software that you want to  
22 document.  The class structures are how the actual code  
23 is laid out and linked to each other and works with each  
24 other.  But it's -- Software Architect is for general  
25 analysis and development of the software.

1           There's, obviously, a lot of -- there's kind of  
2 two sides. There's developing new software and then  
3 there's analyzing software that's already built. And a  
4 lot of times that means audits and metrics and  
5 statistics on different aspects of the models themselves  
6 and the application code and what's linked and what's  
7 working and how much attributes of different class has,  
8 that sort of thing.

9           But these are reports that they can run if they  
10 have an application out there that they want to analyze.

11           Q.    These metrics and statistics, these are  
12 functions that are built into ER/Studio Software  
13 Architect or other ER/Studio products?

14           A.    That's correct, and there's metrics and  
15 analysis on the models to help improve quality of them  
16 and Software Architect has quite a few there. Data  
17 Architect can capture -- sorry, I'm referring back to  
18 the other one we just talked about, but actually, Data  
19 Architect has statistics on the size of the database if  
20 they're looking at a existing -- they're documenting an  
21 existing database.

22           So there's a variety of statistics that we pull  
23 back to help them along those lines.

24           Q.    Now, when you work with all these statistics in  
25 the ER/Studio product line is this all done by computer

1 or by people in a back room wearing green eyeshades?

2 A. It's done by computer and the program.

3 Q. So this is a form of statistical computing?

4 A. Yeah. It's presenting stats and analyzing  
5 what -- it's computing them and it's presenting them to  
6 the user.

7 Q. Okay.

8 A. And then the next two pages are ER/Studio  
9 Business Architect and these are more for high level  
10 conceptual modeling that would present the models and  
11 the business processes at a higher level that's more  
12 geared toward business users that are not technical. So  
13 it would allow more the top down approach of both data  
14 modeling and process modeling.

15 Q. So some of this is for skilled technical people  
16 and others are for less technically skilled  
17 business-oriented people?

18 A. That's right.

19 Q. Now, the analysis and statistics and metrics  
20 that you talked about that are generated, does this run  
21 through all of the products?

22 A. I guess to varying degrees. I would say Data  
23 Architect and Software Architect do a lot more sort of  
24 summarizing of statistics and presenting them about the  
25 models. Business Architect just by who it's targeted at

1 doesn't do a lot of that stuff. But in varying degrees  
2 we have that all across the product line.

3 We have -- the next three pages are ER/Studio  
4 Repository, and this is basically where the models would  
5 be stored and you can set security on the models,  
6 version the models, and it's used -- what customers  
7 would use to work concurrently on the logical and  
8 physical data models as well as the process and  
9 conceptual models.

10 Q. And the ER/Studio Repository on page 3 lists a  
11 number of industry leading DBMSs with which it works?

12 A. Yes. These would be database platforms that  
13 they can run the Repository on that we would install.  
14 It's a subset of the actual databases that can be  
15 modeled with ER/Studio or developed with ER/Studio  
16 Architect.

17 Q. And the vendors or the companies that put out  
18 these DBMSs listed here are?

19 A. It supports Oracle, IBM DB2, Sybase Adaptive  
20 Server Enterprise, and Microsoft SQL Server.

21 Q. And the next two pages?

22 A. This looks like a newer -- the next two pages  
23 are a newer version of the ER/Studio Repository data  
24 sheet. It's similar literature. It's just in a  
25 different format. And then we have ER/Studio Portal,

1 doesn't do a lot of that stuff. But in varying degrees  
2 we have that all across the product line.

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23 are a newer version of the ER/Studio Repository data  
24 sheet. It's similar literature. It's just in a  
25 different format. And then we have ER/Studio Portal,

1 which is again the web interface into the models that  
2 are stored in the Repository.

3 And another key piece of this is searching  
4 which would allow them to, you know, view everywhere  
5 they have a certain customer data, address data,  
6 whatever it might be. And then you can also build  
7 reports that would be any sort of customer port on the  
8 models themselves.

9 That could be both for just a simple  
10 information report of the models and the properties of  
11 them or it could be any sort of metrics on the models to  
12 see how many objects of a certain type you have in the  
13 Repository. It could be any metrics on, you know, where  
14 certain things are missing from models. So there's a  
15 lot of general reporting that you can do that would help  
16 customers with the models.

17 Q. What do you mean by "metrics"?

18 A. It could be object counts. It could be  
19 averages of how many average columns you have across  
20 different tables. It could be a sum of the different  
21 things. So it's just a general reporting interface that  
22 allows the customer to do basically what they want and  
23 build whatever reports they want on the models.

24 Q. So the metrics includes statistics on averages  
25 and things like that?

1 A. It could. It could really be anything.

2 Q. And that's a user option?

3 A. That's a user option, yeah.

4 Q. And the last two pages?

5 A. The last two pages are the universal data  
6 models that we resell, and these are basically packaged  
7 models that can be purchased by customers that might  
8 have customer data, product data, orders, that are  
9 basically prefabricated models that customers can  
10 purchase to jump-start their development of different  
11 applications.

12 Q. And then the last page of Exhibit 6 is -- it's  
13 not a data sheet. It looks like a web page. Can you  
14 explain what that page is?

15 A. So this is the ER/Studio DBMS support and here  
16 we have a list of database management systems that Data  
17 Architect supports. And do you want me to read through  
18 each of these or --

19 Q. Maybe just the company. You don't have to do  
20 the individual databases.

21 A. So we have Hitachi Database, IBM DB2, Informix,  
22 Innerbase, Microsoft Access and SQL Server, Microsoft  
23 Visual FoxPro, MySQL, Netezza, Teradata, Oracle,  
24 Postgres. There's a couple flavors of Sybase databases,  
25 and then there's a generic SQL database.

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22 Innerbase, Microsoft Access and SQL Server, Microsoft  
23 Visual FoxPro, MySQL, Netezza, Teradata, Oracle,  
24 Postgres. There's a couple flavors of Sybase databases,  
25 and then there's a generic SQL database.

1 Q. So this is just a --

2 A. This is database platforms that ER/Studio Data  
3 Architect can either reverse engineer or generate code  
4 for.

5 Q. Okay. Thank you.

6 And then I show you what's been marked as  
7 Exhibit 7 and ask you if you can recognize and identify  
8 what this is?

9 A. Yes.

10 MR. GREENSTEIN: That has not been marked yet  
11 so I'll ask the court reporter to mark that as 7.  
12 Sorry.

13 (Opposer's Exhibit 7 was marked for  
14 identification.)

15 THE WITNESS: So this is the user guide for  
16 ER/Studio Software Architect.

17 BY MR. GREENSTEIN:

18 Q. Just to be clear, it's not the entire user  
19 guide. It's the front page and some --

20 A. Yeah, front page. And here it goes through  
21 what the product is. It basically explains that it's a  
22 development environment or Integrated Development  
23 Environment for building Software Architect models that  
24 would be used to generate software applications.

25 So this would be anything that the customer

1 wants to do for -- to design the software application.

2 Q. Is the development environment the same as an  
3 integrated development environment?

4 A. Yes, they are basically synonymous with each  
5 other. So most of the work in Software Architect would  
6 be on the design side of the development process, but it  
7 would be considered an IDE for the software  
8 applications.

9 Q. Okay. An IDE means Integrated Development  
10 Environment?

11 A. Yes.

12 MR. GREENSTEIN: And, Anthony, the document  
13 here, Embarcadero ER/Studio Software Architect 1.0, was  
14 one of the documents which we provided in discovery, and  
15 the internal pages that are attached here, 144 through  
16 148.

17 MR. RUFO: Yes, I see that.

18 MR. GREENSTEIN: Okay. Very good. I just  
19 wanted to make sure you saw that that was part of what  
20 we had before.

21 MR. RUFO: Just to clarify, that's what you  
22 marked as Exhibit 7?

23 MR. GREENSTEIN: Yes, exactly what we sent to  
24 you with the cover page and pages 144 through 148.

25 MR. RUFO: Yes.

1 MR. GREENSTEIN: I'll ask the court reporter to  
2 mark as Exhibit 8 the ER/Studio 7.6 user guide on the  
3 front cover. We'll explain the rest of it.

4 (Opposer's Exhibit 8 was marked for  
5 identification.)

6 MR. GREENSTEIN: This is 34 pages of excerpts.  
7 Again, it was sent to you and the documents all came out  
8 of the original discovery.

9 BY MR. GREENSTEIN:

10 Q. So I'll ask the witness to go through and  
11 identify the subsets in here, the page numbers and what  
12 these are showing.

13 A. So this is the ER/Studio 7.6 user guide. So  
14 it's page 385. I don't know if these are all in  
15 sequence here. And this is just outlining some --

16 Q. Several following pages.

17 A. Several following pages. There's 386, 440,  
18 453, 463. And this is just documenting functionality  
19 that we have within the tool related to calculations or  
20 statistics that we can present to the user and calculate  
21 for the user on the models themselves.

22 A lot of these are related to capacity analysis  
23 or capacity planning that would tell average row size,  
24 growth analysis, and how quickly or slowly a table, a  
25 table's data is going to grow, and we present a variety

1 of metrics there for that.

2 Q. So this is statistical analysis that the  
3 program does on itself for the benefit of the user?

4 A. Yes, it's statistical analysis that we perform  
5 so they can understand the size of a database and  
6 basically plan for future growth in that regard.

7 Q. And then still within Exhibit 8 --

8 A. We have the ER/Studio 8.0 user guide and this  
9 is two pages. And this is just describing statistics  
10 that we present within our UI that just shows the total  
11 number of objects within a particular model.

12 Q. On the off chance that someone at the  
13 Trademarks Appeal Board doesn't recognize UI --

14 A. UI is -- excuse me -- within the user interface  
15 of ER/Studio Data Architect. So this is presenting  
16 statistics on -- in the status part that just show you  
17 basically the size of your model the number of views,  
18 the number of entities, attributes, relationships just  
19 to present that information to the user.

20 Q. And you're reading that at the top of page 27?

21 A. That's the top of page 27, yes.

22 Q. The third section here is entitled?

23 A. This is the ER/Studio user guide, and this is  
24 describing some of the same functionality here with the  
25 status bar that we present some statistics to the user

1 of metrics there for that.

2 Q. So this is statistical analysis that the  
3 program does on itself for the benefit of the user?

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19 to present that information to the user.

20 Q. And you're reading that at the top of page 27?

21 A. That's the top of page 27, yes.

22 Q. The third section here is entitled?

23 A. This is the ER/Studio user guide, and this is  
24 describing some of the same functionality here with the  
25 status bar that we present some statistics to the user

1 relating to the size of the model.

2 Q. And that's on page?

3 A. That's on page 73 of that user guide. It's  
4 also describing graphs and subgraphs and what we can do  
5 with our layout of the data model. It just presents --  
6 tells the product how to graphically lay out the model.  
7 And there are several algorithms that we can use that  
8 would present the model in different ways.

9 We've got some documentation on page 293 that  
10 just goes through some of the properties that we can  
11 store for a physical model, and this is percent  
12 increase, Min extents, Max extents, and these are Oracle  
13 properties that the user -- that we'd either pull back  
14 from the database itself or the user can manually enter  
15 these statistics and generate them out to the database.

16 Q. Percent increase, is that an example of the  
17 statistical calculation?

18 A. It is. It's actually in the database, but it's  
19 just going to specify when Oracle is allocating new  
20 space for a table. This particular property tells it  
21 how much you want to increase the storage for that. So  
22 it's a property in the physical data model that would  
23 show that the user can manually put in or we can reverse  
24 engineer from the database. And we have the --

25 Q. And still within Exhibit 8?

1 relating to the size of the model.

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19 just going to specify when Oracle is allocating new  
20 space for a table. This particular property tells it  
21 how much you want to increase the storage for that. So  
22 it's a property in the physical data model that would  
23 show that the user can manually put in or we can reverse  
24 engineer from the database. And we have the --

25 Q. And still within Exhibit 8?

1           A.    We have the ER/Studio 8.5, ER/Studio Data  
2 Architect 8.5 user guide.  And these are -- this is  
3 actually showing some code samples that customers can  
4 actually build in their own modules into the database  
5 that can do basically whatever they want.  They can add  
6 their own functionality.  And this is going through  
7 telling them how to set up a collection of objects and  
8 run through that collection, and it can be to count it.  
9 It can be to add a new object, remove an existing  
10 object.  So I guess the count property would present a  
11 statistic of how the -- and they would use that to do a  
12 number of different things.

13                On page 346 we have other -- this is  
14 recommendations for analyzing and computing the  
15 statistics within the Oracle database that would store  
16 our Repository to make sure it runs as quickly as  
17 possible.  These statistics are also -- would also they  
18 can analyze or compute these statistics.  We would  
19 actually pull them into the product to be able to do the  
20 capacity planning for a particular model -- or database,  
21 excuse me.

22           Q.    And all of is a statistical analysis is done by  
23 computer, not by people; right?

24           A.    That's right.  So this is on 439.  This is  
25 another -- more documentation on the status bar that is

1 going to show the object counts within our interface  
2 within the data model.

3 Q. What does it provide?

4 A. It says the RCO Data Architect provides  
5 statistics pertaining to your logical and physical  
6 models and the status bar at the bottom of the  
7 application, and has a list of the statistics that we  
8 would present.

9 The next several pages here are the ER/Studio  
10 Data Architect 8.53 user guide and this is going to be  
11 very similar or just a new version of the same data  
12 sheets that we have been going through. There might be  
13 new things here and this is the same thing for doing the  
14 analyzer compute statistics for the Repository to tune  
15 the Repository.

16 Q. And that's what page?

17 A. That's on page 449.

18 Q. And then the last section of this exhibit?

19 A. The last section is the ER/Studio Software  
20 Architect user guide, and the version is 1.0, and this  
21 goes through, describes some of the functionality for  
22 the model metrics that Software Architect can compute  
23 for the user. It presents a wide range of model  
24 metrics, provides model quality assurance, makes sure  
25 that the model follows maybe different principles or

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21 goes through, describes some of the functionality for  
22 the model metrics that Software Architect can compute  
23 for the user. It presents a wide range of model  
24 metrics, provides model quality assurance, makes sure  
25 that the model follows maybe different principles or

1 design paradigms that the user wants to follow.

2 They could be viewed graphically or they could  
3 be viewed in more of a spreadsheet kind of format, but  
4 we could have graphical options that would allow them to  
5 do bar charts or what's called a caveat chart that just  
6 shows basic statistics and computes those for, you know,  
7 based on the code that was reverse engineered.

8 Q. And does the graphical representations, do they  
9 present the outcome of those statistical calculations?

10 A. It does. So it presents the metrics that are  
11 run and computed on the model. It would then present  
12 those in a graphical format.

13 Q. When you talk about metrics you're just talking  
14 about what?

15 A. Metrics meaning statistics that are based on  
16 the nature of the model, the structure of the models,  
17 and really then the structure of the database or  
18 application that the model originated from.

19 Q. Now, the ER/Studio product line has been around  
20 for a long time; is that correct?

21 A. That's correct. We first launched the first  
22 version of the product in 1996 and I wasn't with the  
23 company back then. I think we probably started selling  
24 it more widely in 1997, and it's steadily grown since  
25 then and is now about a 14 or -- \$14 million a year

1 product line, and then it's been sold every day since  
2 then.

3 Q. And the \$14 million a year relates to just  
4 ER/Studio line or all Embarcadero products?

5 A. Just ER/Studio, so that would be the whole  
6 product family.

7 Q. Any product sold under the marquis ER/Studio?

8 A. Any product sold under the ER/Studio marque,  
9 yes.

10 Q. Do you spend money to advertise and promote and  
11 market this product?

12 A. We do. I think we spend about \$500,000 a year  
13 on marketing activities, webinars, trade shows to  
14 prospects out there.

15 (Opposer's Exhibit 9 was marked for  
16 identification.)

17 BY MR. GREENSTEIN:

18 Q. Exhibit 9, ask you to go through and identify.  
19 It's a group exhibit of 44 pages of essentially  
20 historical data showing web sites and materials over the  
21 past 10 years.

22 A. Okay.

23 Q. Kind of roughly go through that and explain how  
24 the product has expanded over the years and kind of  
25 verify that those are, in fact, web pages that came off

1 product line, and then it's been sold every day since  
2 then.

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24 the product has expanded over the years and kind of  
25 verify that those are, in fact, web pages that came off

1 of web archive sites.

2 A. Yeah, the first three pages here look like just  
3 the products -- the pages off of our web site from 1997,  
4 and just talking about the data modeling and how the  
5 tool was used. And back then it was the ER/Studio and  
6 what was sold as the ER/Studio product was primarily  
7 just for data modeling, which is also commonly referred  
8 to as entity relationship modeling, but the product line  
9 has really expanded since then and includes a number of  
10 products and components and functionality that's not  
11 just geared towards data modeling.

12 So the first -- that's the first three pages  
13 here. I think this next page looks like maybe just some  
14 information on a new version that we were shipping in  
15 1998, and that's the version 251D -- or 25, I guess  
16 that's what it was.

17 Q. Can you explain the coding on this? Are you  
18 familiar with the archive.org web site?

19 A. I am actually familiar with that, yes.

20 Q. This is also called the "way back machine."  
21 Tell me what it does.

22 A. The way back machine basically would allow you  
23 to input a web site and then you can see all of the  
24 different versions of that web site since it was first  
25 launched.

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21 Tell me what it does.

22 A. The way back machine basically would allow you  
23 to input a web site and then you can see all of the  
24 different versions of that web site since it was first  
25 launched.

1 Q. And the coding at the bottom?

2 A. The coding here says it was from February 12th,  
3 1998. And this is showing that Embarcadero is now  
4 shipping a major new release of ER/Studio. It just  
5 talks about the new features that have been added and  
6 the new graphics and allow you to solve your database  
7 design problems more quickly and easier.

8 Q. And the copyright notice on that page is?

9 A. Copyright notice is 1996 through 1998.

10 Q. So that's consistent with the --

11 A. With the archive.

12 Q. -- with the archive date.

13 A. This looks like another archive that is showing  
14 some quotes on a newer version ER/Studio. This looks  
15 like it's from 1999 and it's showing the latest release  
16 of ER/Studio 3 and just talking about some of the  
17 functionality that was introduced in that time frame.

18 This is -- it's the next page and this is from  
19 2002, it look like March 28th, 2002, and it's talking  
20 about DT/Studio, which was a product that we sold that  
21 allows you to move data from one database to another  
22 database. It also talks about the ER/Studio, latest 5.1  
23 release of ER/Studio and the new version of the  
24 Repository 1.2 release and talks about expanding the  
25 metadata capturing capability and implementing new DBMS

1 support for Oracle 9I and AS/400, which is a DB2  
2 database.

3 Q. The archive.org or way back machine is  
4 available to anyone that looks it up on the web; is that  
5 right?

6 A. That's right.

7 Q. By 2002 you were with the company in 1999?

8 A. I was.

9 Q. So do you recall these pages as being accurate  
10 personally?

11 A. Yes. We have another archive page from 2002,  
12 and it looks like August 11th, and this is talking about  
13 enterprise data architecture, and it just shows the  
14 Describe Enterprise, which is for design, document,  
15 maintaining enterprise applications that are written in  
16 Java or C++. That was actually a UML tool that we sold.  
17 We actually discontinued that and relaunched ER/Studio  
18 Software Architect, which was a better tool. And then  
19 it has information on ER/Studio and ER/Studio  
20 Repository.

21 Q. And again, these evidence continual sale of the  
22 ER/Studio line and expansion of the ER/Studio line over  
23 the years?

24 A. Yes, in this case we actually sold those two  
25 products together if users wanted that.

1 Q. When you were say "those two products"?

2 A. Oh, excuse me. Describe Enterprise and  
3 ER/Studio were -- they were sold both separately and  
4 together in a modeling suite.

5 Q. And again, the copyright date on this?

6 A. The copyright date is 2002.

7 Q. Which is consistent with?

8 A. It's consistent with the web archive.

9 So here's the release notes for, and this was  
10 another web archive, looks like it was dated March of  
11 2003, and then February '02 -- or February 2nd, excuse  
12 me. This just talks about what's new in our version  
13 5.5. And we added some functionality here in terms of  
14 new layout, new display properties, different things  
15 that you can do with the models themselves, reverse  
16 engineering updates, forward engineering the code, the  
17 code generation updates, so it just talks about some  
18 things we can do there.

19 Q. Are these minor changes to the original  
20 products or are these significant additions to the  
21 functionality?

22 A. This is a significant version. Well, the 5.5  
23 was a significant version and the 5.51 was a more minor  
24 update, but the 5.5 was a significant update to the  
25 product.

1 Q. And the originals product was 1.0, I assume?

2 A. The original was 1.0.

3 Q. So by the time you get up to 5 we've gone  
4 through several significant upgrades. Is that a fair  
5 statement?

6 A. Yes, it is.

7 Q. What version are we on now?

8 A. We're on 9.0.

9 Q. So the product continues to expand in its  
10 functionality?

11 A. Yes. So this is actually just going through  
12 looks like a release history. So we had a new feature  
13 list for ER/Studio version 5.1.1, what was new in the  
14 Repository 1.2.1, and what was new in the 5.1 version.  
15 And so there is more information on new versions of the  
16 product.

17 Q. This is actually a 12-page printout of the web  
18 site of March 2, 2002?

19 A. It looks like it's providing a high level list  
20 with links to more detail of those features we added  
21 back then.

22 MR. RUFO: Marty, can I just clarify something?  
23 This is being entered only for the pages on their face,  
24 correct, not for the link throughs?

25 MR. GREENSTEIN: Yes.

1 MR. RUFO: Okay. Thank you.

2 BY MR. GREENSTEIN:

3 Q. And again, just kind of looking through this to  
4 -- this description of what the product has, this  
5 12-page printout, it just kind of describes the overall  
6 feature package --

7 A. Yeah, this is describing new features we added  
8 back then, looks like it was for new graphical layouts,  
9 new properties that could be for objects in the model  
10 that could be captured, new kind of updates across the  
11 entire product.

12 And this looks like another web archive from  
13 2003, September 21, and this is just a view of what our  
14 software products do, what they did at the time, which  
15 is enable companies to build, optimize, and manage their  
16 critical business and database applications.

17 Q. And that was kind of a mission of the product  
18 -- of the company at that time?

19 A. Yes, so this was a high level or high level  
20 message of what we do for -- what our products do.

21 Q. And then the next --

22 A. It appears ER/Studio 7.0, new features guide.

23 Q. This is not an archive date? This is  
24 actually --

25 A. This is actually documentation that would

1 document how -- what the new features of a given  
2 release, the 7.0 release were.

3 Q. As of?

4 A. As of October 20th, 2005.

5 Q. This is 19 pages?

6 A. A 19-page document. So many customers would  
7 use this to walk through the new functionality. And we  
8 have it organized. There's a new feature summary.  
9 There's top new features that are the major features of  
10 this release. And do you want me to go through each of  
11 these?

12 Q. No, that's okay.

13 A. Okay. So the highlights here for this release  
14 were new -- the capacity planning. That's the  
15 statistics and metrics around the storage requirements  
16 of a physical model that would be built into a database.  
17 Security management, so management of user's permissions  
18 and rolls, domain inheritance, user defined mappings,  
19 several other updates here in terms of data lineage,  
20 which would capture source and target information, but  
21 yeah, this was a major release that we had.

22 Q. And then?

23 A. Here's another web archive. It looks like it's  
24 from June 18th, 2004. It is an archive from 2004, June  
25 18th, and this is one page. It's showing a new release

1 of DT/Studio 2.2 and then it also has a quote about  
2 ER/Studio 6.5 and the new features that we added there.

3 This is another archive from looks like --  
4 excuse me. It's February 18th, 2006, and this is just a  
5 FAQ list of what we can do for different piece of  
6 functionality. The first question here is talking about  
7 managing and controlling growth in data. And it's just  
8 explaining that ER/Studio provides a model driven  
9 analysis of database objects and talks about the metrics  
10 that we can store for the future growth of a database.

11 Q. And what is FAQ?

12 A. FAQ is frequently asked questions, and is just  
13 probably slanted towards the latest release that we have  
14 out there and trying to guess what our customers are  
15 trying to do with the product and provide them answers  
16 for that.

17 This is a -- looks like a -- it is a data sheet  
18 for ER/Studio in January 4th, 2006, and this is talking  
19 about the enterprise data modeling capabilities of  
20 ER/Studio and then has a list of features that we can do  
21 in terms of where use analysis, how the logical and  
22 physical models are linked together, the graphics and  
23 layout that we can perform for models and dimensional  
24 modeling, validation wizards that we can provide to  
25 improve the quality of the models.

1 Q. This also mentions related products?

2 A. Yes. Those are related products. At the time  
3 we had ER/Studio Viewer, which was a read only, kind of  
4 a similar to Adobe Reader that you can open up a model  
5 that was produced in ER/Studio and view it, navigate it,  
6 zoom in, zoom out, print the model. We had Describe  
7 that was used for application development and software  
8 application development.

9 And then we had DT/Studio that was used for  
10 moving data between different databases. So this is  
11 when we were kind of expanding the product line to get  
12 into things outside the pure entity relationship or data  
13 models.

14 This is an archive from 2008, looks like July  
15 19th. It is July 19th. And this is talking about over  
16 UFR latest 7.6 version and what we added there. It also  
17 describes some of the product additions that we had  
18 here, related products, and some other products that  
19 were in other database administration, database  
20 development.

21 And this next page is from February 20th, 2008,  
22 and this was just an older version of the same page for  
23 version 7.5.

24 MR. GREENSTEIN: Ask the court reporter to mark  
25 Exhibit 10.

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22 and this was just an older version of the same page for  
23 version 7.5.

24 MR. GREENSTEIN: Ask the court reporter to mark  
25 Exhibit 10.

1 (Opposer's Exhibit 10 was marked for  
2 identification.)

3 BY MR. GREENSTEIN:

4 Q. This is a group exhibit of 10 pages and as with  
5 the others, can you go through and explain what they  
6 are, whether you're personally familiar with them, and  
7 talk a bit about each of the probably five data sheets  
8 that are in there?

9 A. Okay. This is -- the first two pages here are  
10 the TurboRuby data sheet. And this was a product that  
11 came along with the CodeGear acquisition, and TurboRuby  
12 is an Integrated Development Environment to develop Ruby  
13 applications.

14 Q. What is Ruby?

15 A. Ruby is a programming language and it's  
16 typically used in web development. And I did not have a  
17 hand in these documents. That would be another group in  
18 the organization, but I am familiar with what these are.

19 Q. Are you familiar with the products that they  
20 represent also?

21 A. Yes, not to the degree of ER/Studio but I am  
22 familiar with them at eye level.

23 Q. Do all of Embarcadero's products, are they all  
24 written in Ruby?

25 A. They are not. They're written in a variety of

1 different languages, so we have Java application, C++  
2 applications, Delphi applications. Delphi's RAD  
3 Studio's built-in Delphi even though it also is used --  
4 the customers would use that to build Delphi code of  
5 their own. But we have -- our products are built in a  
6 variety of different languages and they support a  
7 variety of different languages.

8 Q. And in your experience does the average  
9 customer or professional IT person use and know more  
10 than one language?

11 A. I would say that's a very high likelihood, yes.  
12 It's pretty common for developers probably to have a  
13 core product that they know, but products these days are  
14 developed with a variety of different architectures and  
15 programming languages. I know a lot of time like PHP or  
16 Ruby would be for what's displayed on a web page and the  
17 front end of the web page. Yet behind that is going to  
18 be Java code and maybe in the database they might use  
19 SQL to optimize some of the routines that would happen  
20 on the database side. So we just have the tools to  
21 allow our customers to program in any language they  
22 want.

23 Q. Why are there more than one programming  
24 language? What does one do that another doesn't do,  
25 generally speaking?

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18 be Java code and maybe in the database they might use  
19 SQL to optimize some of the routines that would happen  
20 on the database side. So we just have the tools to  
21 allow our customers to program in any language they  
22 want.

23 Q. Why are there more than one programming  
24 language? What does one do that another doesn't do,  
25 generally speaking?

1           A.    Software development's evolved tremendously  
2 over the years, but different programs, programming  
3 languages sprung up for different reasons.  There's a  
4 time and a place to use different programming languages.  
5 So the strengths of C++ fit very well with a rich  
6 graphical interface, whereas Java or Ruby or HTML,  
7 hypertext language, that's great for web pages.

8           Q.    So they're optimized for certain functions?

9           A.    Optimized for certain functions.  There's an  
10 ease of use factor as well that some languages are  
11 easier to develop different types of applications.

12          Q.    Even though it's not optimized, you could  
13 generally use one language to do something that another  
14 language is more optimized for?

15          A.    Yes, there's overlap between languages and  
16 capabilities of them and what they can do.  Something  
17 like C++ and Java and Delphi, very similar if you're  
18 developing rich graphical interface products.  They have  
19 their strengths and weaknesses in that regard.

20          Q.    Are you familiar with the R language?

21          A.    I'm not familiar with the R language.

22          Q.    Does Embarcadero have products that are written  
23 in the R language?

24          A.    Not to my knowledge, but there's -- Delphi has  
25 a number of plug-ins that people can leverage.  They can

1 build their own plug-ins for languages that are  
2 unsupported. So it's --

3 Q. The R Project web site says that the R language  
4 and environment is for statistical computing and  
5 graphics.

6 MR. RUFO: I'm going to object to that on  
7 foundation.

8 MR. GREENSTEIN: Okay. We'll get to that  
9 later. It's also something your client testified to in  
10 his deposition.

11 BY MR. GREENSTEIN:

12 Q. But does Embarcadero have products that do  
13 anything in the field of graphics, produce graphical  
14 output?

15 A. Absolutely. All of the modeling tools in  
16 ER/Studio have a graphic of the data model or the  
17 process model or the software application model. We  
18 have products on the database management side that would  
19 do monitoring and present statistics and charts and  
20 graphics on what's happening in the database at a given  
21 time.

22 So we have products that -- across our product  
23 line we have a lot of places that graphics are  
24 displayed.

25 Q. And that's done without the use of the R

1 language, though?

2 A. Yes.

3 Q. And you testified that the various products  
4 under the ER/Studio brand do various types of  
5 statistical computing and reports. Is that done with  
6 the R language?

7 A. No.

8 Q. But they were able to do the statistical  
9 computing and reports in whatever languages they were  
10 written in?

11 A. Yes.

12 MR. GREENSTEIN: By the way, Anthony, the  
13 reference to the R language comes from the Exhibit 9 to  
14 the Allaire discovery deposition from the R-project.org  
15 web site. It says R, the language and environment for  
16 statistical computing and graphics. I'll put that in by  
17 notice of reliance later, but that's where the  
18 foundation comes from.

19 MR. RUFO: Okay. Thank you. You can proceed.  
20 Thank you.

21 BY MR. GREENSTEIN:

22 Q. Okay. So you talked about TurboRuby is the  
23 first two pages of Exhibit 10?

24 A. TurboRuby is the first one. Embarcadero RAD  
25 Studio is the next one here, and this is for general

1 development. And this is basically describing the  
2 Delphi product line. You have Delphi and C++ which is  
3 the Delphi IDE. We have application development -- I'm  
4 sorry, web development for Dot Net and PHP, and then web  
5 service development through a number of languages here,  
6 Delphi, PHP, C++, Dot Net, Java Scripter or anything  
7 else.

8           The Data Snap Server is something that is sold  
9 in different editions of RAD Studio which would allow  
10 access to databases and then you have the server kind of  
11 graphics here. That would be the database servers or  
12 the web servers or other -- basically, places where the  
13 applications are going to be deployed.

14           Q. Data Snap is a trademark and product of  
15 CodeGear that came along with the acquisition; correct?

16           A. Yes.

17           Q. Now owned by Embarcadero?

18           A. Now owned by Embarcadero. So this is just  
19 describing all the different applications and languages  
20 that can be built with RAD Studio XE.

21           Q. And this is an application development suite or  
22 application development software?

23           A. Yes, it would be software IDE, Integrated  
24 Development Environment, where they can program in  
25 whatever language they want.

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22 application development software?

23           A. Yes, it would be software IDE, Integrated  
24 Development Environment, where they can program in  
25 whatever language they want.

1 Q. And products like this that Embarcadero sells,  
2 application development products, do they interface with  
3 the databases developed by the ER/Studio line?

4 A. They do. Actually, we bundle a version of  
5 ER/Studio called the ER/Studio Developer Edition into  
6 RAD Studio, and that would basically provide the  
7 database development, database design capabilities for  
8 the application developers that need to work with  
9 databases.

10 Q. So there's a very definite relationship between  
11 the application development and the database modeling  
12 and development and design?

13 A. Yes. The next one here is RadPHP XE and this  
14 is a product that we -- or IDE that we sell specific for  
15 PHP applications. And I actually don't remember what  
16 PHP stands for, but it's a web development language  
17 that's used to design and develop web applications.

18 Q. This is called a visual development  
19 environment?

20 A. Yeah, visual IDE, graphical IDE, those can be  
21 thought of as the same. IDE typically is visual and  
22 has -- and does a lot of the code generation for users.  
23 They can do a lot of dragging and dropping to build the  
24 software interface rather than hand coding it  
25 themselves. That would take a lot more time.

1 Q. So this use of graphics is to replace a single  
2 character that used to appear in the old days on the  
3 screen?

4 A. That's correct. So the graphics, it's a lot  
5 easier, obviously, to deal with graphics than it is  
6 code. And what's made these IDEs popular is that  
7 they're visual form building graphics that the user can  
8 rearrange just by moving their mouse and dragging and  
9 dropping rather than having to go and edit the code  
10 themselves.

11 Q. And the products that Embarcadero has that are  
12 more heavily graphics-oriented will use languages that  
13 are more optimized for graphics?

14 A. Yes, and that's really what's made the RAD  
15 Studio or Delphi product family so popular is that it is  
16 a graphical -- an interface that provides graphical  
17 development rather than -- you can write the code  
18 yourself, but it does a lot of the work for you through  
19 the use of graphics and visual form building.

20 Q. Okay. Thank you.

21 A. The next one here is Innerbase XE, and this is  
22 the database server that we sell. It's used to imbed  
23 into devices and used for application developers that  
24 want to store data but they don't want to have the  
25 maintenance and administration of like an Oracle or a

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22 the database server that we sell. It's used to imbed  
23 into devices and used for application developers that  
24 want to store data but they don't want to have the  
25 maintenance and administration of like an Oracle or a

1 SQL server that's harder to administer.

2 The Innerbase is a very lightweight -- you can  
3 imbed it or use it as a client server database, but it's  
4 very lightweight and easy to use.

5 Q. In the right column they mention a number of  
6 other products. Can you speak briefly to each of those?

7 A. Yes. So when you have Innerbase, which is the  
8 database, that's just the place that developers would  
9 use to store the data. They're going to need to develop  
10 code around that database to do certain things, and we  
11 have a list of related products that would describe  
12 different aspects. Rapid SQL is listed here. That's  
13 our SQL IDE, or Integrated Development Environment. We  
14 have --

15 Q. You say you've developed code. You mean write  
16 applications, develop applications?

17 A. Rapid SQL specifically for SQL development,  
18 so --

19 Q. Is that an application or what is a SQL  
20 development? Does that mean develop an application for  
21 SQL?

22 A. SQL is the language. It's just another  
23 programming language that databases understand. So it's  
24 used to either -- SQL is used to either build the  
25 structure of the database or manipulate the data in the

1 SQL server that's harder to administer.

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24 used to either -- SQL is used to either build the  
25 structure of the database or manipulate the data in the

1 database.

2 Q. Is this different from application development  
3 or is this what the goal is, application development?

4 A. Well, I would say there's a roof on top that  
5 we're developing an application, and then parts of that  
6 are the database and parts of that are the application  
7 code. And they can be -- they're very tightly  
8 integrated so SQL development is typically for the  
9 database development and then application development  
10 would be for Delphi or Java or C++ or PHP, whatever type  
11 of interface you're presenting to the user. And the  
12 related products here kind of list different products  
13 that you're going to use depending on what area of the  
14 application you're working on.

15 So one would be the SQL development RAD Studio  
16 XE like the Delphi or interface that you're displaying  
17 on windows, whereas Third Rail or Ruby is maybe  
18 something that you want to display through the web. So  
19 there's just different aspects depending on the type of  
20 application that they're building, which, obviously, can  
21 be anything they want.

22 Q. So the end goal is to build some kind of  
23 application that a customer wants to build for itself  
24 using a database that the customer built or wanted to  
25 build for itself and populate it and maintains.

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23 application that a customer wants to build for itself  
24 using a database that the customer built or wanted to  
25 build for itself and populate it and maintains.

1 MR. RUFO: I'm going to object to that as a  
2 statement as opposed to a question.

3 BY MR. GREENSTEIN:

4 Q. Okay. Could you explain what the end goal is  
5 here, please?

6 A. The end goal, obviously, is to build  
7 applications to -- that -- either to sell or provide a  
8 service for customers. And the development of these  
9 really is arbitrary. It can be anything that the  
10 customer wants to build for whatever industry or  
11 whatever problems they're trying to solve for their  
12 customer. So they're very generalized in that regard.

13 Q. And does the ER/Studio product line work with  
14 any of these?

15 A. It does. We actually support Innerbase XE so  
16 if they need to design and deploy an Innerbase database,  
17 they can do that through ER/Studio Data Architect.

18 Q. And what about any of the other ones?

19 A. Well, we have Embarcadero All Access that  
20 basically again is going to provide editions of all of  
21 our products and provide all these products so that they  
22 don't have to be purchased individually. They can be  
23 purchased as a suite.

24 Q. And I think you mentioned RAD Studio XE before?

25 A. Yeah, RAD Studio XE is basically all of our

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21 our products and provide all these products so that they  
22 don't have to be purchased individually. They can be  
23 purchased as a suite.

24 Q. And I think you mentioned RAD Studio XE before?

25 A. Yeah, RAD Studio XE is basically all of our

1 application tools bundled together so they can develop  
2 any sort of application that they want. And then the  
3 last one here is Delphi XE, and Delphi is used to build  
4 Windows applications. And Delphi is RAD Studio  
5 basically -- without the XE -- includes Delphi and C++  
6 Builder, and those products together make up RAD Studio.

7 And then the other products we sell to the  
8 other IDEs for PHP and Dot Net and other languages and  
9 the Data Snap Server are also included in the XE bundle.  
10 And that's the last data sheet here.

11 MR. GREENSTEIN: And then mark Exhibit 11,  
12 which is 14 pages.

13 (Opposer's Exhibit 11 was marked for  
14 identification.)

15 BY MR. GREENSTEIN:

16 Q. You're looking at Exhibit 11. Could you  
17 explain to me what these are, where they come from, and  
18 how they interact with some of our products?

19 A. Yes, so this first one is an article on our  
20 developer network. And when I say "article" it can be  
21 anything from an actual article that would provide  
22 knowledge about different aspects of one of our  
23 products. It could be a component or program that a  
24 user wants to share with other users. It could be a  
25 video. It could be a lot of things.

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2 any sort of application that they want. And then the  
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22 knowledge about different aspects of one of our  
23 products. It could be a component or program that a  
24 user wants to share with other users. It could be a  
25 video. It could be a lot of things.

1           So it's kind of a general term. And this here  
2           is the TeeChart Pro version 8 for RAD Studio 2009, and  
3           basically what this is is a program that would be used  
4           with RAD Studio and it looks like it's providing a chart  
5           and graphical capabilities, charting and graphical  
6           capabilities, for RAD Studio if a developer using RAD  
7           Studio wanted -- needed to do graphics in 2D or 3D or  
8           statistical function and present charts within their  
9           application they could use this TeeChart add-on in their  
10          application.

11           So then they would get the capabilities of  
12          statistical analysis and functions and graphics and  
13          things to present to their users.

14          Q. Do they actually download the program from the  
15          web site, the Embarcadero web site?

16          A. Yes. It's on our Embarcadero developer  
17          network, so the program can be downloaded from -- which  
18          is a subset of our Embarcadero web site.

19          Q. And what does TeeChart Pro offer?

20          A. It offers hundreds of graph styles in 2D and  
21          3D. So graphs would be pie charts, bar charts, whatever  
22          other charts that you need or graphs that you need, 40  
23          mathematical and statistical functions that you can use  
24          with an unlimited number of "axes" and 22 pallet  
25          components that would just be different charts and

1 graphs that you would want to present to users of an  
2 application.

3 Q. This is available on the Embarcadero web site?

4 A. It is.

5 Q. And the next page?

6 A. So this is the same TeeChart Pro component but  
7 it's for Delphi Prism, which is a Dot Net development  
8 IDE. Dot Net is just a different programming language,  
9 and this is another version of that application that  
10 would provide the statistical functions and the  
11 statistical analysis and computing and the financial  
12 functions extended to statistical functions if one of  
13 our customers is using the Dot Net programming language,  
14 they could use this for that.

15 Q. And this was for a version of Embarcadero's  
16 Delphi product?

17 A. So Delphi Prism is specifically for Dot Net  
18 programs, which is a Microsoft programming language or  
19 group of programming languages.

20 Q. Dot Net is?

21 A. Dot Net is.

22 Q. But Delphi Prism is --

23 A. Delphi Prism is an Embarcadero product for  
24 customers that want to program in that language. And  
25 this is an add-on for Delphi Prism that customers of

1 graphs that you would want to present to users of an  
2 application.

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18 programs, which is a Microsoft programming language or  
19 group of programming languages.

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22 Q. But Delphi Prism is --

23 A. Delphi Prism is an Embarcadero product for  
24 customers that want to program in that language. And  
25 this is an add-on for Delphi Prism that customers of

1 Delphi Prism can leverage.

2 Q. And they can download this add-on from the  
3 Embarcadero web site?

4 A. Yes.

5 Q. Next page?

6 A. So the next page is a -- it's something else  
7 that looks -- it's for the Delphi tools and it's a stats  
8 package for VCL, which is the visual component library  
9 which would provide components and routines for  
10 statistical analysis and matrix and vector manipulations  
11 and Delphi or C++ Builder.

12 Q. And this was a shareware site?

13 A. It is a shareware site.

14 Q. And this is intended to work with Embarcadero's  
15 Delphi product?

16 A. That's correct. So it would actually work with  
17 Delphi or C++ Builder.

18 Q. And is this what they call a plug-in?

19 A. This is a plug-in, so any -- if anybody that's  
20 programming with Delphi or C++ Builder needs any sort of  
21 components or routines for statistical analysis and  
22 vector manipulation, they would use this plug-in for  
23 that.

24 Q. And this works with Embarcadero's Delphi but  
25 the product is not from Embarcadero; correct?

1 A. Yes.

2 Q. Do you know what language this statistical  
3 analysis routine's program is written in?

4 A. It is VCL, which is Delphi, so it looks like --  
5 I actually can't say with 100 percent accuracy because  
6 I'm not -- from what it says here it's for the visual  
7 component library, which is the UI components within  
8 Delphi.

9 So it looks like it's providing UI management  
10 for that. But in terms of what's underneath I would  
11 guess it's Delphi but it could be something else.

12 Q. And the next page is part of that same web  
13 page. The next two pages are from filebuzz.com web site  
14 also?

15 A. Yes.

16 Q. And explain what this represents or what this  
17 is.

18 A. This is Bonita Open Source Solution and it  
19 provides 600 routines or methods for components of  
20 different routines including mathematics, statistics,  
21 fractions, physics, so it looks like it's for any  
22 statistical computing, mathematical functions, like a  
23 library of function that customers can use if they're  
24 developing in Delphi.

25 Q. And does this work with other Embarcadero

1 products also?

2 A. Yeah. Delphi, C++, RAD Studio are using the  
3 combined version of those and Turbo Delphi. These are  
4 different editions of the Delphi or RAD Studio product.

5 Q. And this is a third party product that people  
6 can download from this web site, not Embarcadero?

7 A. Yes.

8 Q. And they pay for this; right?

9 A. Yes.

10 Q. But its purpose is to add statistical  
11 functionality?

12 A. This is adding statistical computing,  
13 mathematical functions, probability, any sort of  
14 fractions and any sort of other financial computations.

15 Q. Then the next two pages after that are from  
16 where?

17 A. The next two page are from our DB Optimizer  
18 data sheet.

19 Q. These are Embarcadero's?

20 A. Excuse me. Embarcadero's web page describing  
21 DB Optimizer XE.

22 Q. Are you personally familiar with this product?

23 A. I am. So DB Optimizer is used to basically  
24 tune or optimize SQL that would run in a database, and  
25 it uses a lot of statistical analysis and metrics, you

1 know, gathers a lot of statistics and data from the  
2 database that tells it how quickly or slowly a  
3 particular query is running, how it's running within the  
4 database, what data it's accessing, what indexes are  
5 used.

6 And indexes are just basically things that can  
7 be created on a table that would speed up the access of  
8 the data within that table. So it's basically providing  
9 graphical visualization of the wait time analysis.

10 Q. How do they describe the reporting features on  
11 the top of the page?

12 A. The reporting is basically going to provide --  
13 it provides the execution of statistics, profiling  
14 details, predicate analysis and explain plans. It's  
15 basically just statistics on how the SQL's performing  
16 within the database.

17 Here we have the DB Performance Center XE. And  
18 Performance Center XE is our database performance and  
19 monitoring solution. And this is going to give a  
20 realtime performance analysis of a database, so it  
21 provides a number of graphs and charts that would  
22 present statistics on what's going on in the database  
23 and what SQL is running, how long it's taking to run, if  
24 there's any sort of locks on a particular table and  
25 people can't access data as quickly as they want.

1           It would give storage metrics and analysis of  
2 what the current situation is in terms of free space  
3 within the database. So it's going to provide a number  
4 of critical statistics like memory usage, I/O,  
5 contention, what objects are being accessed, what users  
6 are currently running sessions. But it presents a lot  
7 of different -- collects a lot of data, computes a lot  
8 of different statistics, and stores those for historical  
9 analysis.

10          Q.    When you get Embarcadero All Access this is  
11 essentially bundled with ER/Studio?

12          A.    It is.

13          Q.    Page 2 under the description, what do they talk  
14 about the statistical performance?

15          A.    On the home page there's basically statistical  
16 performance and availability indicators for each  
17 database. So it provides a, you know, quick glance of  
18 the overall health of a particular database, and then  
19 they can drill into more -- into deeper statistics from  
20 that home page.

21          Q.    And then the next three pages, second page is a  
22 key one -- I'm sorry. The next two pages. First page  
23 is just a header page. Second page is what?

24          A.    So this is a Unicode statistics tool, and this  
25 is going to provide and collect useful statistics on how

1           It would give storage metrics and analysis of  
2 what the current situation is in terms of free space  
3 within the database. So it's going to provide a number  
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22 key one -- I'm sorry. The next two pages. First page  
23 is just a header page. Second page is what?

24          A.    So this is a Unicode statistics tool, and this  
25 is going to provide and collect useful statistics on how

1 hard or easy it would be to migrate older applications  
2 to Unicode. And Unicode is just a character set that is  
3 internationally recognized to store characters for  
4 different languages.

5 Q. Where is this from?

6 A. This is from our own web site.

7 Q. The Embarcadero --

8 A. The Embarcadero developer network.

9 Q. And do you actually download this statistics  
10 tool from the web site?

11 A. Yes. So this would be downloaded from our web  
12 site.

13 Q. On the left column under Code Central it seems  
14 to list the entire product line?

15 A. Yes, so within Code Central we have articles  
16 that relate to all different products or they could  
17 relate to -- they could relate to individual products or  
18 a combination of any of the products. So I think this  
19 is just basically a filtering mechanism that would allow  
20 you to search articles based on different products.

21 Q. So within the web site the entire product line,  
22 including the ER/Studio line, the application  
23 development line, and all the other products are all  
24 together in the support or download section?

25 A. Yes.

1 Q. And is this consistent with the kind of general  
2 marketing of all of the products together under the  
3 Embarcadero label?

4 A. Right. We generally sell the products to all  
5 types of users.

6 Q. And then the next page?

7 A. The next page is a Innerbase performance  
8 monitor add-on or utility, excuse me. And it's a free  
9 utility. It basically is a simple graphical user  
10 interface that allows users to view detailed statistics  
11 about the current Innerbase database that would provide  
12 memory usage, users that are running sessions within the  
13 database, transactions that are occurring, the table  
14 views and procedures that are in use, and then provide  
15 some simple administrative tasks.

16 Q. So is this then doing a statistical analysis  
17 and visual display of the performance of the Innerbase  
18 database?

19 A. Yes. It's providing the capability for the  
20 user. So it would show memory usage, statistics  
21 surroundings memory usage and what's happening in the  
22 database at a given point in time.

23 Q. And is this program downloadable from the  
24 Embarcadero web site?

25 A. It is.

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20 user. So it would show memory usage, statistics  
21 surroundings memory usage and what's happening in the  
22 database at a given point in time.

23 Q. And is this program downloadable from the  
24 Embarcadero web site?

25 A. It is.

1 Q. And then the final page in this group?

2 A. The final page is the DB Artisan Capacity  
3 Analyst. And this is basically providing statistics and  
4 metrics for how much space is being used in the  
5 database, how fast the database is growing, and it can  
6 present recommendations for how to provide storage for  
7 the database in the future. But it's basically  
8 gathering statistics and presenting them in a different  
9 way, so computing different statistics for the user.

10 Q. And you present to them in some kind of visual  
11 graphical analysis?

12 A. Yes, it presents graphs in terms of, yeah, the  
13 statistics are presented in graphical format.

14 Q. Okay. Thank you.

15 MR. GREENSTEIN: Can we take a five-minute  
16 break?

17 MR. RUFO: Sure. Would you like me to just  
18 call back in five minutes?

19 MR. GREENSTEIN: Sure.

20 (Break taken.)

21 (Opposer's Exhibit 12 was marked for  
22 identification.)

23 BY MR. GREENSTEIN:

24 Q. One point of clarification on your sales  
25 numbers before you testified to, the actual numbers are

1 something in excess of that because you didn't want to  
2 give actual sales numbers for confidentiality purposes;  
3 is that correct?

4 A. Yes.

5 Q. And it's true of the marketing numbers, too?

6 A. The market expenditures, it's a rough estimate  
7 of that.

8 Q. So just summing up the market confidential,  
9 just to be clear on the record, if someone looks at  
10 this, those aren't the -- the sales figures are actually  
11 above that?

12 MR. RUFO: I'm going to object to that  
13 representation to the extent that it doesn't really  
14 quantify for the record just exactly how large the sales  
15 figures are. To the extent you're going to rely upon  
16 that in your brief I think it's prejudicial.

17 MR. GREENSTEIN: It's prejudicial that it would  
18 be?

19 MR. RUFO: That you can represent that the  
20 sales figures are above \$14 million and yet we have  
21 nothing in the record to point to exactly how far above  
22 14 million it is, so the inference could be any number  
23 above that.

24 MR. GREENSTEIN: We will not claim for purposes  
25 of this case that they're above 14 million.

1 MR. RUFO: Then I would not object to the use  
2 of the \$14 million figure. Any claim above that, as you  
3 just said, I would object to so --

4 MR. GREENSTEIN: That's fine. We will not  
5 claim that the numbers are higher than that in briefs or  
6 arguments. I just don't want to go through the hassle  
7 of putting in an actual number and making it  
8 confidential and separating it out.

9 MR. RUFO: I understand. Thank you.

10 MR. GREENSTEIN: And then I've asked the  
11 reporter to mark Exhibit 12.

12 MR. RUFO: Okay.

13 MR. GREENSTEIN: Exhibit 12 are actually a  
14 series of exhibits that were identified and marked in  
15 the Allaire deposition. They're Allaire Exhibit 9,  
16 Allaire Exhibit 4, Allaire Exhibit 5, Allaire Exhibit 7,  
17 and Allaire Exhibit 11.

18 MR. RUFO: Yes. I don't have 7 in my set so  
19 can you just give me one second to pull mine from my  
20 copy?

21 MR. GREENSTEIN: Yeah, it's RubyForge -- on  
22 Allaire Exhibit 8, also. Sorry.

23 MR. RUFO: 7. I apologize. I clipped them  
24 together. I do have them all right in front of me.

25 MR. GREENSTEIN: 9, 4, 5, 7, 8, 11, and 12 in

1 the order I just read them just happens to be the order  
2 I scanned them in. Nothing magical. By way of  
3 foundation those have been previously identified in the  
4 discovery deposition of Allaire on September 27, 2010.

5 MR. RUFO: Is it your intent to file any notice  
6 of reliance for use of these if you're going to refer to  
7 them in your brief?

8 MR. GREENSTEIN: Yeah, yeah. I'll do that.

9 MR. RUFO: Okay.

10 BY MR. GREENSTEIN:

11 Q. Mr. Tiret, have you ever seen the R Project web  
12 site?

13 A. No, I haven't.

14 Q. What's been marked as Exhibit 9 is a page that  
15 is called what is R? And it states on there, "R is a  
16 language and environment for statistical computing and  
17 graphics."

18 MR. RUFO: Marty, I'm going to interrupt you  
19 just to clarify the record. You said what's marked as  
20 Exhibit 9, but I think you meant the Allaire depo  
21 Exhibit 9.

22 MR. GREENSTEIN: You're correct, Anthony. What  
23 was previously marked as Allaire Exhibit 9 is the first  
24 two pages of Exhibit 12.

25 BY MR. GREENSTEIN:

1 Q. It does say in here in the third paragraph up  
2 from the bottom that "it facilitates" -- the way it's  
3 written, "It facilitates calls to C, C++, and Fortran by  
4 users," and that is what it is on the web site.

5 My question to you is are you familiar with the  
6 fact that different programs can make calls to other  
7 programs written in other languages?

8 A. Yes, I mean it's -- any language basically if  
9 the language provides it, can be called by other  
10 languages.

11 Q. So as a general principle, programs can make  
12 calls to other programs independent of the language  
13 programs are written in?

14 A. Yes.

15 Q. The next two pages of Exhibit 12, which are  
16 Allaire Exhibit 4 from the Allaire deposition of  
17 September 27th, are an article from the Journal of  
18 Statistical Software from January of 2009 entitled  
19 "RinRuby: Accessing the R Interpreter from Pure Ruby."  
20 Are you familiar with this article?

21 A. I am not.

22 Q. But are you familiar with, again, the concept  
23 of being able to access one language interpreter from  
24 another language such as Ruby?

25 A. Yes.

1 Q. So that's not an uncommon situation?

2 A. No.

3 Q. In fact, Embarcadero has at least one product  
4 that's written in Ruby; correct?

5 A. It's not written in Ruby but it's used to  
6 program and write Ruby.

7 Q. So it's an application development environment  
8 for Ruby?

9 A. That's correct.

10 Q. So is that the type of program that could make  
11 a call to another program in R or some other language?

12 A. Yes.

13 Q. And, in fact, this article leads off by talking  
14 about scripting languages such as Ruby, Python, Perl,  
15 PHP, and then compares them to C, C++, and Java.  
16 Embarcadero does have products that work in the Ruby and  
17 PHP environment and also C++ and Java; is that correct?

18 A. Yes.

19 Q. And others?

20 A. Yes.

21 Q. The next one page is an article that was  
22 introduced as Exhibit 5 in the Allaire deposition of  
23 September 27, 2010, entitled "Calling Ruby, Pro, or  
24 Python from R," June 16th, 2010. Is this an article  
25 that you're personally familiar with?

1 A. No.

2 Q. You are familiar with this concept of calling  
3 one language or a program written in one language from  
4 another language?

5 A. Yes.

6 Q. The next page is Allaire Exhibit 7 of September  
7 27, 2010, for a product called RubyForge by Ruby  
8 Central. Are you familiar with RubyForge or the company  
9 Ruby Central?

10 A. I'm not.

11 Q. But again, here, too, this describes their  
12 product RS Ruby as a bridge between Ruby and the R  
13 interpreted language which allows you to call one from  
14 the other, and that's --

15 A. Yes, I'm familiar with that.

16 Q. And generally, that's a known technique between  
17 programs?

18 A. Yes.

19 Q. And then the next page is Allaire Exhibit 8, a  
20 product called R-Forge, which describes -- are you  
21 familiar with this article?

22 A. I'm not.

23 Q. Okay. I won't ask you about that one.

24 The other two are just articles about the R  
25 language which you said you're not familiar with so I

1 won't ask about those.

2           Based on your experience in marketing and sales  
3 for all these years, do you have a view as to whether a  
4 typical customer is likely to be confused or see a  
5 conflict with the use of R Studio for statistical  
6 computer software or application development software  
7 and Embarcadero's long use of ER/Studio?

8           A.    Yes, I would say there's a likelihood of  
9 overlap between users of those two products, and the  
10 names together are very similar. "E" can often be  
11 referred to as a general term that means on-line or  
12 electronic.

13           Q.    You're talking about the E prefix?

14           A.    The E prefix. There's a lot of probably  
15 overlap for what our customers are doing in various  
16 fields, whether it's analyzing a bunch of health care  
17 data or pharmaceutical trials or financial data. If  
18 they're doing any statistical analysis or computing  
19 there, there's a likelihood that might be the same  
20 developers that could be using both products and causing  
21 confusion in terms of which is which.

22           The languages are kind of -- our customers can  
23 develop in any language so it -- it's -- there's -- we  
24 don't know what they're going to program in. So it can  
25 be very confusing if they see similarly named products

1 for, you know -- they may program in one language one  
2 day and add another language or another technology and  
3 start programming in another language. We don't really  
4 restrict that or we want to provide the development tool  
5 for any programming language that they program in.

6 MR. GREENSTEIN: Okay. I think that's  
7 everything I have. I offer all the exhibits into  
8 evidence.

9 MR. RUFO: Okay. I do want to do some  
10 cross-examination. I don't expect it's going to be  
11 terribly lengthy, but if it's possible for us to take,  
12 say, a 10-minute break for me just to pull my notes  
13 together, and then we can pick back up on the record.

14 MR. GREENSTEIN: Sure.

15 MR. RUFO: I will give you a call at 15 past.

16 MR. GREENSTEIN: Sounds good.

17 (Break taken.)

18 MR. RUFO: We're back on the record?

19 MR. GREENSTEIN: Yes.

20

21 EXAMINATION

22 BY MR. RUFO:

23 Q. Mr. Tiret, I just have a short list of  
24 questions. I don't want to take up too much of your  
25 time this morning or I guess afternoon now.

1           The first thing I want to address is you  
2 testified to the original product that became ER/Studio  
3 going on the market in 1996. I just want to clarify.  
4 In 1996 the product wasn't actually called ER/Studio,  
5 was it?

6           A. No, it wasn't. It was originally named ER/1  
7 and that was seen as -- one of our competitors  
8 complained that it was too close to their file format,  
9 which was .ER letter -- number 1 for their file format  
10 so we changed the name to ER/Studio.

11          Q. And when was ER/Studio first used?

12          A. You know, I wasn't with the company back then.  
13 I would imagine sometime in 1997 it first launched as  
14 ER/Studio, but probably the version 2 of the product.

15          Q. And that would have been ER/Studio 1.0 at that  
16 point?

17          A. I think ER 1 was the 1.0 and then when we  
18 changed the name we didn't start the version over again.  
19 It was probably 2.0.

20           MR. GREENSTEIN: If you know. Don't speculate.

21           THE WITNESS: That's --

22 BY MR. RUFO:

23          Q. That's fine.

24          A. That's to the best of my knowledge.

25          Q. Thank you. And I want to turn your attention

1 to what I believe was marked Trial Exhibit 8. Just let  
2 me know when you have that.

3 A. Okay. One second. Okay. I have it.

4 Q. And this was a collection of ER/Studio user  
5 guides as well as ER/Studio Data Architect user guide;  
6 is that correct? I believe also one ER/Studio Software  
7 Architect user guide?

8 A. That's correct.

9 Q. And I just want to clarify. ER/Studio Data  
10 Architect, that is what used to be referred to simply as  
11 ER/Studio?

12 A. Yes.

13 Q. During your testimony today you talked about  
14 the various statistical capabilities of ER/Studio, which  
15 is now called ER/Studio Data Architect. Focussing on  
16 those for the time being, it's true, however, is it not,  
17 that the statistical computing that you testified to is  
18 limited to the metadata generated by the program and is  
19 not statistical computing of external data; is that  
20 correct?

21 A. Well, not necessarily. When we reverse  
22 engineer and compute the statistics for capacity  
23 planning metrics it's based off of the data that's in  
24 the database.

25 Q. Is it based off of the actual database itself

1 on the data points, or the amount of data that's in the  
2 database?

3 A. The amount of data.

4 Q. And wouldn't that be characterized as metadata?

5 A. In a sense I guess it could, yes.

6 Q. So is it correct that the ER/Studio ER/Studio  
7 Data Architect program does not have native capability  
8 to perform statistical calculations on external data?

9 A. That's correct.

10 Q. Okay. Thank you. And you also spoke about the  
11 graphical capabilities involved in the ER/Studio and  
12 ER/Studio Data Architect programs and you mentioned, I  
13 believe, that the statistical analysis that could be  
14 performed could be represented graphically. Have I  
15 characterized your testimony correctly?

16 A. Yes.

17 Q. And that graphical representation of  
18 statistical information, that would also be a graphical  
19 representation of statistical metadata as opposed to  
20 external data; is that correct?

21 A. Yes.

22 Q. And turning to the last page of this exhibit or  
23 rather the last collection in this exhibit where  
24 speaking specifically about the ER/Studio Software  
25 Architect, the graphical -- actually, let me go back.

1 Not graphical but rather the statistical data that is  
2 being outputted or computed by Studio Software  
3 Architect -- excuse me, ER/Studio Software Architect  
4 that is also a statistical calculation of metadata; is  
5 that correct?

6 A. Yes, that's correct.

7 Q. And the graphical representation then would be  
8 a graphical representation of statistical analysis of  
9 metadata?

10 A. It's still statistical analysis, but --

11 Q. I understand that but is not statistical  
12 analysis of external data but rather I'll use metadata;  
13 correct?

14 A. Yes.

15 Q. Thank you.

16 If I could now then turn your attention to --  
17 actually, before going to another exhibit I just wanted  
18 to ask you a couple of questions about one of the  
19 products you testified about, the RadPHP XE.

20 A. Okay.

21 Q. The first one, I just want to clarify, the  
22 RadPHP XE, that is not a product sold under the  
23 ER/Studio trademark, is it?

24 A. No, it's not.

25 Q. And you talked about that being a program

1 capable of performing graphical programming or as a  
2 graphical programming language; is that correct?

3 A. That's correct, yeah. It uses -- I mean it  
4 provides a graphical interface to build the program that  
5 you want to build.

6 Q. And so that is distinctly different than the  
7 graphical statistical output you were talking about with  
8 the ER/Studio products; correct?

9 A. Yeah. It's different in the sense that when  
10 you're building something with RAD Studio PHP you've got  
11 the graphical ability to lay out how the interface of  
12 the program works and that sort of thing. And then  
13 there's graphical analysis in the form of graphs and  
14 charts, which would be different. That would be maybe  
15 part of the UI of an application somebody is building,  
16 but it's probably more of the end user of the  
17 application that would have that.

18 Q. So you're not talking about then graphical  
19 representation of statistical information; is that  
20 correct?

21 A. I don't know if I can answer that because, you  
22 know, it's -- there's what you're building the program  
23 for and there's the building of the program.

24 Q. Building of the program portion, the graphical  
25 interface you're talking about is not statistical

1 graphics, but it's rather the graphical -- you're using  
2 the graphical capabilities to lay out the design of the  
3 interface; correct?

4 A. Yes, that's correct.

5 Q. And I would then now like to turn your  
6 attention to Exhibit No. 11.

7 A. Okay.

8 Q. So looking at the first page, I believe this is  
9 the portion of the exhibit that talks about the TeeChart  
10 Pro V8 for RAD Studio; is that correct?

11 A. Yes.

12 Q. Looking at that TeeChart, is that a product or  
13 the TeeChart Pro V8, is that a product that's created by  
14 Embarcadero?

15 A. I actually can't answer that. It looks like it  
16 was built from reading the article by David Bernida and  
17 he may not have been with the company when this was  
18 built. I don't know that.

19 Q. And it interfaces with RAD Studio 2009;  
20 correct?

21 A. Yes.

22 Q. Is RAD Studio 2009 a product that is sold under  
23 the ER/Studio trademark?

24 A. It is not sold under the ER/Studio trademark,  
25 but it has a version of ER/Studio bundled with it.

1 Q. It has a version of ER/Studio bundled with it  
2 when?

3 A. It's the RAD Studio Architect edition that  
4 includes ER/Studio Developer edition.

5 Q. RAD Studio itself is never sold under the  
6 ER/Studio trademark; is that correct?

7 MR. GREENSTEIN: Objection. RAD Studio is RAD  
8 Studio Developer edition or other editions.

9 THE WITNESS: I mean it's its own trademark and  
10 ER/Studio has its own trademark. They're sold together  
11 in the RAD Studio Architect edition. They're also sold  
12 together in All Access, which is a product offering that  
13 we offer for customers that want many of our products  
14 bundled together.

15 BY MR. RUFO:

16 Q. I understand that, but just to clarify, RAD  
17 Studio is never sold as an ER/Studio product. So for  
18 instance, you would not say, "Would you like to buy  
19 ER/Studio's RAD Studio 2009?"

20 A. That's correct.

21 Q. Looking at the next page or the next two pages,  
22 I believe -- I'm sorry. It's the next page. Again, for  
23 Delphi this is TeeChart Pro for Delphi Prism.Net.

24 A. Okay.

25 Q. Is there a product created by Embarcadero that

1 Q. It has a version of ER/Studio bundled with it  
2 when?

3 A. It's the RAD Studio Architect edition that  
4 includes ER/Studio Developer edition.

5 Q. RAD Studio itself is never sold under the  
6 ER/Studio trademark; is that correct?

7 MR. GREENSTEIN: Objection. RAD Studio is RAD  
8 Studio Developer edition or other editions.

9 THE WITNESS: I mean it's its own trademark and  
10 ER/Studio has its own trademark. They're sold together  
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13 we offer for customers that want many of our products  
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15 BY MR. RUFO:

16 Q. I understand that, but just to clarify, RAD  
17 Studio is never sold as an ER/Studio product. So for  
18 instance, you would not say, "Would you like to buy  
19 ER/Studio's RAD Studio 2009?"

20 A. That's correct.

21 Q. Looking at the next page or the next two pages,  
22 I believe -- I'm sorry. It's the next page. Again, for  
23 Delphi this is TeeChart Pro for Delphi Prism.Net.

24 A. Okay.

25 Q. Is there a product created by Embarcadero that

1 is sold under the ER/Studio trademark that TeeChart Pro  
2 interfaces with?

3 A. No.

4 Q. Thank you. Moving on to the next page, this is  
5 the Bonita Open Solution. Is this a product that is  
6 produced by Embarcadero?

7 A. I can't answer that but I don't think so.

8 Q. And does this product interface with any  
9 product created by Embarcadero that is marketed under  
10 the ER/Studio trademark?

11 A. Well, marketed or sold?

12 Q. Sold under the ER/Studio trademark.

13 A. Well, it works with Delphi, and again, Delphi  
14 is sold with ER/Studio Developer edition and certain  
15 editions of RAD Studio.

16 Q. Let me clarify the difference between sold with  
17 and sold under. I understand that I can sell two  
18 different products together, but when I say sold under I  
19 mean is there a product that bears the ER/Studio  
20 trademark that interfaces with BonitaSoft?

21 A. No.

22 Q. And moving to the next page where we have the  
23 ESBPCS for VCL?

24 A. Okay.

25 Q. Is there a product that interfaces with

1 something -- with a product made by Embarcadero that is  
2 sold under the ER/Studio trademark?

3 A. No.

4 Q. And moving to the next page -- I actually think  
5 that I'm missing the next page so if you could please  
6 read for me what it says at the top of the page? I know  
7 it's a DB.

8 A. DB optimizer XE?

9 Q. Yes. Thank you. Is that a product sold under  
10 the ER/Studio trademark?

11 A. No, it's its own trademark.

12 Q. And then what I believe is the last page of  
13 this collection, the DB Performance Center XE, again, I  
14 would ask you the same question. Is this a product sold  
15 under the ER/Studio trademark?

16 A. It's not but --

17 Q. I understand you might want to continue but  
18 you've already answered my question so I'm going to move  
19 on to the next question and direct you to the next page  
20 where we have Unicode statistical tools, and I would ask  
21 you again do you know if Unicode statistical tools are  
22 produced by Embarcadero?

23 A. Anders Olson is an Embarcadero employee so --

24 Q. Okay. Thank you. And does this statistical  
25 tool interface with a product made by Embarcadero that

1 something -- with a product made by Embarcadero that is  
2 sold under the ER/Studio trademark?

3 A. No.

4 Q. And moving to the next page -- I actually think  
5 that I'm missing the next page so if you could please  
6 read for me what it says at the top of the page? I know  
7 it's a DB.

8 A. DB optimizer XE?

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10 the ER/Studio trademark?

11 A. No, it's its own trademark.

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13 this collection, the DB Performance Center XE, again, I  
14 would ask you the same question. Is this a product sold  
15 under the ER/Studio trademark?

16 A. It's not but --

17 Q. I understand you might want to continue but  
18 you've already answered my question so I'm going to move  
19 on to the next question and direct you to the next page  
20 where we have Unicode statistical tools, and I would ask  
21 you again do you know if Unicode statistical tools are  
22 produced by Embarcadero?

23 A. Anders Olson is an Embarcadero employee so --

24 Q. Okay. Thank you. And does this statistical  
25 tool interface with a product made by Embarcadero that

1 is sold under the ER/Studio trademark?

2 A. No.

3 Q. And moving on to the next page we have  
4 Interbase Performance Monitor 1.1. Does this product  
5 interface with a product sold under the ER/Studio  
6 trademark?

7 A. Well, let me clarify. It can be used with it  
8 and we -- ER/Studio directly supports Innerbase, so  
9 there's a high likelihood that somebody using this  
10 performance monitor might also be using ER/Studio.

11 Q. You said a likelihood, though. Does this  
12 directly -- someone might also be using ER/Studio but  
13 does it directly interface with a product under the,  
14 ER/Studio trademark?

15 A. In the sense that it -- this Innerbase  
16 performance monitor is monitoring Innerbase, and  
17 ER/Studio designs and develops Innerbase databases. So  
18 they can go hand in hand. I don't know how to answer  
19 that question. They could very well be the same user  
20 that's using these two products.

21 Q. I didn't ask if it was the same user. I asked  
22 if this product itself directly interfaced with an  
23 ER/Studio product.

24 A. Well, that question's a little vague because  
25 ER/Studio designs and develops Innerbase databases. So

1 is sold under the ER/Studio trademark?

2 A. No.

3 Q. And moving on to the next page we have  
4 Interbase Performance Monitor 1.1. Does this product  
5 interface with a product sold under the ER/Studio  
6 trademark?

7 A. Well, let me clarify. It can be used with it  
8 and we -- ER/Studio directly supports Innerbase, so  
9 there's a high likelihood that somebody using this  
10 performance monitor might also be using ER/Studio.

11 Q. You said a likelihood, though. Does this  
12 directly -- someone might also be using ER/Studio but  
13 does it directly interface with a product under the,  
14 ER/Studio trademark?

15 A. In the sense that it -- this Innerbase  
16 performance monitor is monitoring Innerbase, and  
17 ER/Studio designs and develops Innerbase databases. So  
18 they can go hand in hand. I don't know how to answer  
19 that question. They could very well be the same user  
20 that's using these two products.

21 Q. I didn't ask if it was the same user. I asked  
22 if this product itself directly interfaced with an  
23 ER/Studio product.

24 A. Well, that question's a little vague because  
25 ER/Studio designs and develops Innerbase databases. So

1 in that sense I guess the answer would be yes, but I  
2 still don't know how clear that question is.

3 Q. Then I'll move on. Looking at the last page of  
4 this collection we have the DB Artisan Capacity Analyst.  
5 Is DB Artisan a product sold under the ER/Studio  
6 trademark?

7 A. It is not.

8 Q. Now I'd like to direct your attention if I may  
9 to Exhibit 12.

10 A. Okay.

11 Q. This was a collection of information, some of  
12 which you did not speak to, regarding the R computing  
13 language as well as Ruby. It's my understanding that  
14 Embarcadero has a TurboRuby product; is that correct?

15 A. That's correct.

16 Q. And I believe that you were asked questions  
17 about Ruby's innate ability to call the R language; is  
18 that correct?

19 A. Yes.

20 Q. And I would ask you TurboRuby produced by  
21 Embarcadero, is that sold under the ER/Studio trademark?

22 A. No, it's not.

23 MR. RUFO: I have no further questions.

24 MR. GREENSTEIN: Give us five minutes and we'll  
25 call you back this time.

1 in that sense I guess the answer would be yes, but I  
2 still don't know how clear that question is.

3 Q. Then I'll move on. Looking at the last page of  
4 this collection we have the DB Artisan Capacity Analyst.  
5 Is DB Artisan a product sold under the ER/Studio  
6 trademark?

7 A. It is not.

8 Q. Now I'd like to direct your attention if I may  
9 to Exhibit 12.

10 A. Okay.

11 Q. This was a collection of information, some of  
12 which you did not speak to, regarding the R computing  
13 language as well as Ruby. It's my understanding that  
14 Embarcadero has a TurboRuby product; is that correct?

15 A. That's correct.

16 Q. And I believe that you were asked questions  
17 about Ruby's innate ability to call the R language; is  
18 that correct?

19 A. Yes.

20 Q. And I would ask you TurboRuby produced by  
21 Embarcadero, is that sold under the ER/Studio trademark?

22 A. No, it's not.

23 MR. RUFO: I have no further questions.

24 MR. GREENSTEIN: Give us five minutes and we'll  
25 call you back this time.

1 MR. RUFO: Sure.

2 MR. GREENSTEIN: What's the direct number  
3 there?

4 MR. RUFO: I'm at (617) 832-1274.

5 MR. GREENSTEIN: Okay. Very good. Thank you.  
6 (Break taken.)

7 MR. GREENSTEIN: Just a couple of really  
8 brilliant, insightful points on recross.

9 MR. RUFO: I look forward to it.

10

11 FURTHER EXAMINATION

12 BY MR. GREENSTEIN:

13 Q. Mr. Tiret, you had testified earlier and I'll  
14 just ask you to repeat briefly. The continuum of  
15 products going from database to applications, can you  
16 just kind of summarize that again in terms of what  
17 Embarcadero does in terms of database modeling, design,  
18 et cetera?

19 A. In terms of the database and application and  
20 developing the development that happens on both, we  
21 provide tools as a company to users that are building  
22 applications, applications with databases, and databases  
23 that would store any number of -- information on it, you  
24 know. They could be developing with who knows what  
25 application and to manipulate any type of data that they

1 have.

2 Q. And does a database generally have use if you  
3 don't have an application to reach the data and do  
4 something with it?

5 A. No.

6 Q. Does an application have use if you don't have  
7 the data to input to the application?

8 A. No, the application is there to manipulate and  
9 create new data or edit existing data.

10 Q. So a typical company has all sorts of data that  
11 they have to store and then they have applications that  
12 use that data?

13 A. Yes.

14 Q. Now, Mr. Rufo distinguished between the  
15 metadata that's acted on by the native applications of  
16 the ER/Studio products and the external data. What acts  
17 on the external data?

18 A. The application is going to act on the external  
19 data to manipulate it to create new data sets and the  
20 database, obviously, is going to store that data.

21 Q. So the ER/Studio products do have some native  
22 statistical computing functionality that operates on the  
23 database but not the customer data that's stored on the  
24 database; is that correct?

25 A. That's correct.

1 Q. Okay. And then the external programs, the  
2 application development programs and the programs  
3 written using the other Embarcadero products, they will  
4 act on the data which is in the database?

5 A. Yes.

6 Q. And as to those, we don't know what the  
7 customers actually do. We're not involved in that for  
8 the most part; is that correct?

9 A. That's right. They can do whatever they want  
10 with the tools and you can see the examples previously  
11 shown with the charts and plug-ins that are into RAD  
12 Studio and bundling ER/Studio with RAD Studio so they  
13 can get the full application life cycle of both the  
14 application code and the database code, so it's all  
15 linked together.

16 Q. And you testified that we do have a number of  
17 customers in statistical analysis, heavy industries like  
18 health care and pharmaceuticals and so forth?

19 A. Yes.

20 Q. And the fact that third parties are producing  
21 plug-ins that do expanded statistical functions, is that  
22 to you suggestive of the fact that customers need to do  
23 expanded statistical functions using our application  
24 development programs?

25 A. Yes.

1 Q. And that's why they would purchase and install  
2 these plug-ins that provide these statistical functions?

3 A. That's correct.

4 Q. And those functions then act on what Mr. Rufo  
5 is calling the external data or the data that populated  
6 the database inserted by the end user?

7 A. Yes.

8 Q. Okay. So is it fair to say then that  
9 Embarcadero is active in statistical analysis software  
10 as a native application for the metadata within its  
11 databases and active in statistical analysis  
12 capabilities for external data in its application  
13 development programs?

14 A. That's accurate.

15 Q. And is it similarly fair to say that  
16 Embarcadero is active in graphics and visualization with  
17 respect to the metadata of the databases and with  
18 respect to the external data through its application  
19 development software and IDEs?

20 A. Yes.

21 Q. And again, I believe you testified that all of  
22 the Embarcadero products, ER/Studio, the database  
23 management product, the application development IDEs are  
24 sold through the same sales team off the same web sites  
25 to the same customers for this continuum purpose of soup

1 to nuts database to application?

2 A. Yes.

3 Q. And in your experience are you -- can you say  
4 that customers know that ER/Studio is Embarcadero and  
5 Embarcadero's product line?

6 A. Yes.

7 Q. And I think you also testified that you thought  
8 that customers would see R-Studio as another Embarcadero  
9 product?

10 A. Yes, there could absolutely be confusion there.

11 MR. GREENSTEIN: Okay. I have no further  
12 questions there.

13 MR. RUFO: I would take a couple of quick  
14 questions for recross.

15

16 FURTHER EXAMINATION

17 BY MR. RUFO:

18 Q. Mr. Tiret, you've just answered a series of  
19 questions related to the different functionalities of  
20 Embarcadero products, but I want to make it clear in  
21 terms of the products produced by Embarcadero that  
22 interact with the external data, those are not the  
23 ER/Studio products; is that correct?

24 A. That would be correct.

25 MR. RUFO: Thank you very much. I don't have

1 any further questions.

2 MR. GREENSTEIN: Neither do I. Now what do we  
3 do?

4 MR. RUFO: I think we end the deposition.

5 MR. GREENSTEIN: All right. You talked me into  
6 it.

7 MR. RUFO: We didn't waive on the record having  
8 the transcript sealed by the reporter. Is that  
9 something you wanted to do?

10 MR. GREENSTEIN: I don't think so. There's  
11 nothing in there -- sealed in terms of confidentiality?

12 MR. RUFO: I mean sealed in terms of the  
13 procedure where the reporter has to actually seal and  
14 send it to the board if we don't stipulate that that's  
15 necessary.

16 MR. GREENSTEIN: I'm happy to waive it.

17 MR. RUFO: I'm happy to waive it, too, but I  
18 just wanted to make sure it's on the record so you don't  
19 get stuck having to go through the other rigamarole.

20 MR. GREENSTEIN: You introduced all the  
21 exhibits so that's taken care of.

22 MR. RUFO: And to the extent that the materials  
23 weren't authenticated such that they weren't Embarcadero  
24 materials you are planning on filing a --

25 MR. GREENSTEIN: Notice of reliance.

1 MR. RUFO: Let me reiterate this was in our  
2 communications early on. We will stipulate to filing  
3 notices of reliance for two weeks beyond the close of  
4 your trial period.

5 MR. GREENSTEIN: Thank you.

6 MR. RUFO: Great. Everyone, you have wonderful  
7 afternoons, and I'll be in touch soon.

8 MR. GREENSTEIN: Okay. See you.

9

10 (Whereupon, the deposition of Jason  
11 Tiret concluded at 12:51 p.m.)

12

13 I certify under penalty of perjury under the laws of the  
14 State of California that the foregoing is true and  
15 correct.

16

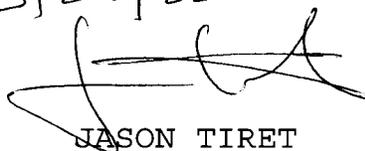
17

Date

3/29/2011

18

Witness



19

JASON TIRET

20

21

22

See attached  
Acknowledgement

23

24

Tim Casey

25

# CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

State of California

County of San Francisco

On March 29, 2011 before me, Trish Casey, Notary Public  
(Here insert name and title of the officer)

personally appeared Jason Tret

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Trish Casey  
Signature of Notary Public



(Notary Seal)

## ADDITIONAL OPTIONAL INFORMATION

### INSTRUCTIONS FOR COMPLETING THIS FORM

Any acknowledgment completed in California must contain verbiage exactly as appears above in the notary section or a separate acknowledgment form must be properly completed and attached to that document. The only exception is if a document is to be recorded outside of California. In such instances, any alternative acknowledgment verbiage as may be printed on such a document so long as the verbiage does not require the notary to do something that is illegal for a notary in California (i.e. certifying the authorized capacity of the signer). Please check the document carefully for proper notarial wording and attach this form if required.

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- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he~~/she/~~they~~, is /are) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
  - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
  - ❖ Indicate title or type of attached document, number of pages and date.
  - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document

### DESCRIPTION OF THE ATTACHED DOCUMENT

Testimony

(Title or description of attached document)

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Number of Pages 1 Document Date 3-29-11

(Additional information)

### CAPACITY CLAIMED BY THE SIGNER

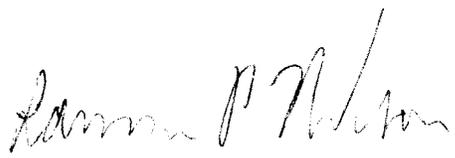
- Individual (s)  
 Corporate Officer  
\_\_\_\_\_  
(Title)  
 Partner(s)  
 Attorney-in-Fact  
 Trustee(s)  
 Other \_\_\_\_\_

1 STATE OF CALIFORNIA )  
2 COUNTY OF SANTA CLARA )

3  
4 I, LAWRENCE PAUL NELSON, Certified Shorthand  
5 Reporter in and for the State of California, do hereby  
6 certify that the witness in the foregoing deposition was  
7 by me duly sworn to testify to the truth, the whole  
8 truth, and nothing but the truth in the within-entitled  
9 cause, that the foregoing is a full, complete and true  
10 record of said testimony, and that the witness was given  
11 an opportunity to read and correct said deposition and  
12 to subscribe to the same.

13 I further certify that I am not interested in  
14 the outcome of this action, nor connected with, nor  
15 related to any of the parties in said action, nor to  
16 their respective counsel.

17 Date: February 22, 2011  
18

19  
20   
21  
22 Lawrence Paul Nelson  
23 Certified Shorthand Reporter  
24 License No. 12144  
25

1 STATE OF CALIFORNIA )  
2 COUNTY OF SANTA CLARA )

3

4 I, LAWRENCE PAUL NELSON, Certified Shorthand  
5 Reporter in and for the State of California, do hereby  
6 certify that the witness in the foregoing deposition was  
7 by me duly sworn to testify to the truth, the whole  
8 truth, and nothing but the truth in the within-entitled  
9 cause, that the adverse party was present by telephone,  
10 that the foregoing is a full, complete and true record  
11 of said testimony, and that the witness was given an  
12 opportunity to read and correct said deposition and to  
13 subscribe to the same.

14 I further certify that I am not interested in  
15 the outcome of this action, nor connected with, nor  
16 related to any of the parties in said action, nor to  
17 their respective counsel, and that I was not  
18 disqualified as specified in Rule 28 of the Federal  
19 Rules of Civil Procedure.

20 The aforementioned proceedings took place at  
21 4820 Harwood, 2nd Floor, San Jose, California, on  
22 February 9, 2011, commencing at 9:30 a.m.

23 Date: April 4, 2011

24



25

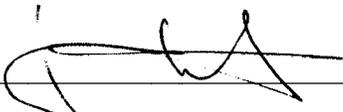
Lawrence Paul Nelson  
CSR No. 12144

**ERRATA SHEET**  
**Changes in Testimony**

Embarcadero Technologies, Inc. V. RStudio, Inc.  
 Jason Tiret  
 February 9, 2011

Page: Line	From	To
106:4-5	“E/R Studio”	“ER/Studio”
106: 20 106: 24 107:11 109: 5 123: 22 149: 21 150: 2 150: 7 152: 15 152: 16 162: 7 162: 11 162: 17 181: 8 181: 15 181: 16 181: 17 181: 25	“Innerbase”	“Interbase”
105: 24	“Studio”	“ER/Studio”
113: 2	“3rd Rail”	“3rdRail”
113: 3	“IVEs”	“IDEs”
113: 6 113: 12 152: 19 160: 10 178: 12	“All Access”	“All-Access”
121: 15-16	“ER/Studio Architect”	“ER/Studio Data Architect”
127: 13	“Trademarks Appeal Board”	“Trademark Trial and Appeal Board”

128: 6	“ow”	“how”
130: 4	“RCO Data Architect”	“ER/Studio Data Architect”
130: 10	“8.53”	“8.5.3”
132: 8	“marque”	“mark”
133: 15	“251D” “25”	“2.5.1d” “2.5”
141: 15-16	“over UFR latest 7.6 version”	“our ER/Studio latest 7.6 version”
141: 17	“additions”	“editions”
143: 2-3	“Delphi’s RAD Studio’s built-in Delphi even though it also is used”	“RAD Studio’s built in Delphi even though it also is used”
147: 8 147: 14	“Data Snap”	“Datsnap”
147: 4 147: 6 153: 8 155: 7 155: 8 155: 13 155: 17 155: 20 155: 21	“Dot Net”	“.NET”
147: 6	“Scripter”	“script”
149: 22 150: 3	“imbed”	“embed”
151: 17	“Third Rail”	“3rdRail”
180: 8	“DB optimizer XE”	“DB Optimizer XE”
182: 4 182: 5	“DB Aritsan”	“DBArtisan”



Signature of Witness

March 19, 2011

Date



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February 23, 2011

Mr. Jason Tiret  
c/o Martin R. Greenstein, Esq.  
Techmark A Law Corporation  
4820 Harwood Rode, 2<sup>nd</sup> Floor  
San Jose, CA 95124

RE: Embarcadero Technologies v. RStudio  
Deposition taken on February 9, 2011

Dear Mr. Tiret:

The transcript of your deposition taken in the above matter is now ready for your review, corrections if necessary, and signature. If your deposition is not signed by you within 30 days of receipt of transcript, the court reporter will sign the deposition certificate and seal the original deposition transcript, which will be used at the time of trial or hearing as though you have read and signed it.

Please contact your attorney if you wish to review your deposition. If you or your attorney will send a letter listing any desired corrections by page and line number, the letter will be filed with the original deposition transcript and copies of the corrections sent to all counsel.

If you are not represented by an attorney, please contact us within 10 days of the date of this letter if you intend to review the original transcript in our office so that an appointment may be made for you to come in.

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# EXHIBITS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

EMBARCADERO TECHNOLOGIES, INC.

Opposer

v.

RSTUDIO, INC.

Applicant.

Opposition No.: 91-193,335

Trademarks: RSTUDIO

Serial Nos.: 77/691,980  
77/691,984  
77/691,987

OPPOSER'S NOTICE OF TAKING TESTIMONY DEPOSITION

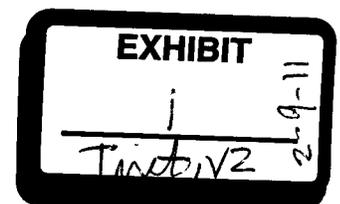
TO ALL PARTIES AND TO THEIR ATTORNEYS OF RECORD HEREIN:

PLEASE TAKE NOTICE that Opposer, Embarcadero Technologies, Inc., ("Embarcadero", or "Opposer") shall take the deposition of Jason Tirt, employee of, and c/o Embarcadero Technologies, Inc., 100 California Street, 12<sup>th</sup> Floor, San Francisco, CA 94111, (Tel: 415-834-3131) under oath before and stenographically transcribed by a certified court reporter. The deposition of Jason Tirt shall commence on Wednesday, February 2, 2011 beginning at 9:30 am and shall take place at the office of counsel for Opposer - TechMark a Law Corporation, 4820 Harwood Road, 2<sup>nd</sup> Floor, San Jose, CA 95124 (Tel: 408-266-4700). The deposition will continue from day to day until completed. You are invited to attend and cross examine.

Dated: January 14, 2011

Respectfully Submitted,

By: /Martin R Greenstein/  
Martin R. Greenstein  
Mariela P. Vidolova  
Leah Z. Halpert  
TechMark a Law Corporation  
4820 Harwood Road, 2<sup>nd</sup> Floor  
San Jose, CA 95124-5273  
Tel: (408) 266-4700; Fax: (408) 850-1955  
E-Mail: MRG@TechMark.com  
Attorneys for Opposer



**CERTIFICATE OF SERVICE**

I hereby certify that a true and correct copy of the foregoing **OPPOSER'S NOTICE OF TAKING TESTIMONY DEPOSITION** is being served on January 14, 2011, by first class mail, postage prepaid on Applicant's Attorney of Record at his address below, with a courtesy copy sent by e-mail to: [CEW@foleyhoag.com](mailto:CEW@foleyhoag.com), [JHuston@foleyhoag.com](mailto:JHuston@foleyhoag.com), [ARufo@foleyhoag.com](mailto:ARufo@foleyhoag.com):

Charles E. Weinstein, Esq.  
Julia Huston  
Joshua S. Jarvis  
Anthony E. Rufo  
FOLEY HOAG LLP  
155 Seaport Blvd, Ste 1600  
Boston, MA 02210-2600  
Tel: (617) 832-1000  
E-Mail: [CEW@foleyhoag.com](mailto:CEW@foleyhoag.com)

*/Mariela P Vidolova/*  
Mariela P. Vidolova

Jason Tiret - Background Testimony: Exhibit 2

My name is Jason Tiret. I am currently the Director of Modeling and Design Solutions in the Product Management Department of Embarcadero Technologies, Inc. (hereinafter “Embarcadero Technologies” or “Embarcadero”). Embarcadero Technologies is located at 100 California Street, 12<sup>th</sup> Floor, San Francisco, California 94111. My phone number at Embarcadero Technologies is (415) 834-3131, extension 300.

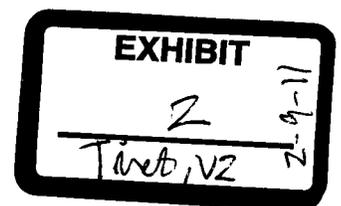
CodeGear, LLC is a wholly owned subsidiary of Embarcadero, and was acquired on June 30, 2008. In the acquisition, Embarcadero obtained all of CodeGear, LLC’s software products and trademarks.

Educational Background:

I graduated from U.C. Davis with a Bachelor of Science degree in applied mathematics and a minor in economics. During school, I took some courses in programming, but focused mainly on mathematics.

Employment History:

I was hired by Embarcadero Technologies after graduating from U.C. Davis in October, 1999. My initial position with Embarcadero was in Technical Support, which lasted until January 2001. My work in Technical Support was not product specific, and covered all of the Embarcadero products. My responsibilities included fielding customer calls, as well as diagnosing and testing bugs in software. In January 2001, I moved to the Presales Department, where I worked until June 2004. In the Presales Department I worked with sales representatives to demonstrate the Embarcadero line of products. My work in Presales also did not focus solely



on one product line, but rather across the entire gamut of the products offered by Embarcadero. In June 2004, I became a Product Manager at Embarcadero where I began to focus my attention on ER/Studio, which evolved since June 2004 to encompass the entire ER/Studio Brand of products. Within the Product Management Department, I was a Product Manager for 3 years, and then became a Senior Product Manager for 1 year, ultimately culminating in my current position. Today, I am the Director of Modeling and Design Solutions in the Product Management Department of Embarcadero, a position I have held for about 3 years. In this position I set the roadmap and strategic direction for our modeling design and development tools under the ER/Studio brand name. In a typical day I work with teams representing the entire life cycle of the ER/Studio brand of products and services. I work with the Development Department both on current releases of the ER/Studio brand of products and services, as well as developing requirements for future releases. I work with the Sales Department on selling the ER/Studio brands of products and services to current and future customers. I work with the Support Department on any issues that have been elevated to them, and I work with the Product Marketing Department during release cycles to develop the product messaging associated with the ER/Studio brand of products and services. Additionally, as my responsibilities include designing the requirements for the development of the ER/Studio Brand of products of services, I work closely with those who maintain contact with our customers to determine what types of features, capabilities, and interoperability with Embarcadero's other product lines our customers require.

Although my job focuses on the ER/Studio brand of products, my previous Embarcadero positions has familiarized me with the entire line of products and services offered by Embarcadero. Additionally, as many of the products offered under the ER/Studio brand name

bundle in various products from across the Embarcadero lines, I am familiar with all of Embarcadero's products and services, and how they interoperate with the ER/Studio brand of products and services. With my 11 years of experience throughout different departments of Embarcadero and working with different brands of products, I am able to testify on behalf of Embarcadero Technologies.

#### Continuum of a Database:

The ER/Studio line of products helps a database user through the entire database cycle.

Databases are very much at the core of the modern commercial software application process, which is, in essence, the creation and use of application programs to act on data important to a business's activities.

At the start of the process, the professional developer (or development team) will design or model a database to determine what data needs to be stored, how it needs to be stored, and how it will be accessed and used.

From the database model, database designers can then create the database needed to meet those objectives.

The database, once created, is populated or filled with the relevant data - an ongoing process that continues through the life of the database. Various database management tools and utilities help with the maintenance, upkeep, integrity checks and overall management of the database.

The data in the database is used by various applications programs - some "off the shelf" but most others written for specific purposes - written using application development software or "integrated development environments" (IDE's). These various and wide-ranging application programs access the database and operate on the data to accomplish the desired goals and meet

the requirements of the business operation. The output is typically in the form of reports or data exported to or accessed by other programs. Along the way, the various programs - programs for database modeling, design and creation, programs for database maintenance and management, applications development software, user-specific applications, reporting programs and others all typically create statistical reports and summaries of activities, statistical analysis and reports on the data in the database, statistical reports on information needed by the business in its day-to-day and/or long term operations and analysis.

Many of these functions are found within Embarcadero's ER/Studio line of products. Others are found in companion Embarcadero software programs that are sold in conjunction with the ER/Studio line, which complement and are used with the ER/Studio line, and which are marketed to the same customers, and utilized by those customers for the same or closely related purposes.

The ER/Studio brand of products allows customers to begin with modeling the database they wish to create. From there the ER/Studio brand of products and services lead the customer through the design and development of their individual database. Once created, the database is implemented when the customer inputs the relevant data and information within it. From these initial steps, the database created with the help of ER/Studio products and services becomes a powerful tool to the customer as it can easily analyze and report different statistical analyses on the data or any combination of results the user wishes to see from the data originally inputted. Exhibit 3, from the ER/Studio Data Architect manual, shows some of the close relationships between various components of the ER/Studio line of products and data, database design, database management systems (DBMS) and the input and output functionality of data as it moves through the application development and implementation process.



Product Documentation

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# ER/Studio® Data Architect

User Guide

Version 8.5.3  
Published February 2010

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12TH FLOOR  
SAN FRANCISCO, CALIFORNIA  
94111 USA

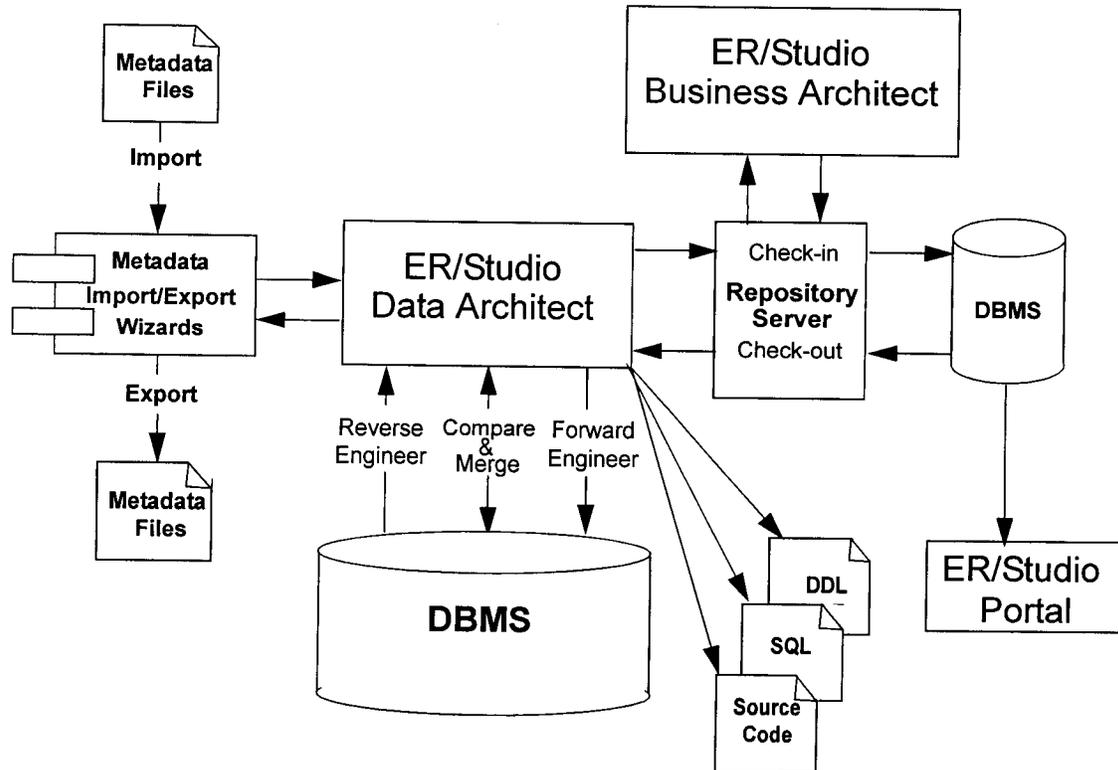
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L7, 313 LA TROBE STREET  
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AUSTRALIA



## APPLICATION DESIGN

The following diagram shows the functional relationship among ER/Studio components and with the software components of a typical development system.



## ER/Studio Enterprise Components

### APPLICATION INTERFACE

The application interface is divided into several tabbed windows that let you navigate and customize your workspace. The application includes context-sensitive toolbars, menus, intuitive icons, keyboard commands, and other resources to help you work efficiently. ER/Studio DA's user interface has a standard Windows look and feel.

For a detailed description of the internal data structure of the ER/Studio DA application and the Repository, you can look at Metadata models (DM1 files), usually found in the following directories:

- **Windows XP:** C:\Documents and Settings\All Users\Application Data\Embarcadero\ERStudioDA\_X.X\Sample Models



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**SAN FRANCISCO - May 7, 2008** - Embarcadero Technologies, a **database tools** company privately-held by Thoma Cressey Bravo, today announced that they signed a definitive asset purchase agreement with Borland Software Corporation (NASDAQ: BURL) to purchase its CodeGear division. The transaction is expected to close in 30 to 60 days. By combining the market leaders in **development tools** and **database tools**, Embarcadero will be able to address the growing productivity and resource challenges companies face as a result of different applications and diverse database platforms. With more than \$100 million in annual revenue and over 500 employees worldwide, the combined companies will operate under the Embarcadero Technologies name.

"The **application and database development worlds are colliding** and the synergies between these two companies make this union timely and logical," said Orlando Bravo, managing partner of Thoma Cressey Bravo. "This acquisition will yield Embarcadero the financial strength, people and product innovation to aggressively address the demands of this evolving market," said Holden Spaht, Principal of Thoma Cressey Bravo.

The acquisition of the CodeGear business is expected to make Embarcadero the world's largest, independent software provider offering an integrated portfolio to **design, develop, manage and optimize heterogeneous applications and their databases**. Customers and partners will benefit from Embarcadero's ability to help fully integrate their application development lifecycle, automate error-prone tasks and dramatically increase their productivity.

In addition, Embarcadero gains a significantly larger sales footprint to serve **millions of software developers, architects, independent software vendors (ISVs)** and database professionals worldwide. The combined market opportunity for Embarcadero and CodeGear products will represent more than 15 million users worldwide and is expected to grow by up to 10 percent annually, according to industry reports.

"Today's announcement is great news for our CodeGear customers, employees, partners and the community at large," said Jim Douglas, CEO of CodeGear. "This will give us the resources to be even more aggressive and focused on our core products and markets."

CodeGear serves a range of **Java** and **Windows developers** through its award-winning **JBuilder®**, **Delphi®** and **C++Builder®** product lines, as well as a new generation of web developers with its innovative products for the PHP and Ruby languages.

"CodeGear is a recognized leader with a loyal developer community and established global channels," said Wayne Williams, CEO of Embarcadero Technologies. "By incorporating its strong product portfolio, Embarcadero will be positioned to expand into new markets and develop cutting-edge products that are a quantum leap for the industry. The combination of our companies will unlock enormous potential for our customers and partners."

Embarcadero expects to pay approximately \$23 million to Borland for the CodeGear assets and Borland will retain CodeGear accounts receivables, which are estimated to have an approximate value of an additional \$7 million. Other material terms will be disclosed in a Form 8-K to be filed by Borland with the Securities and Exchange Commission.

The transaction is expected to close by June 30, 2008. Until then, Embarcadero will continue to operate as an autonomous entity and CodeGear will remain a division of Borland Software. Once the transaction is closed, Williams will continue in his role and lead the combined business.

**Media Contact:**  
Michelle Chase  
Chase Communications  
303-284-8440  
michelle@chasecomm.net

### About Embarcadero Technologies

Embarcadero Technologies, Inc. delivers professional grade database tools that companies use to design, develop and manage databases and the data they contain. More than 12,000 customers worldwide and over 90 of the Fortune 100 rely on

Embarcadero's cross-platform tools to reduce complexity, improve productivity and strengthen security. The company's flagship database tools include: ER/Studio, DBArtisan, Rapid SQL and Change Manager. Founded in 1993, Embarcadero Technologies is headquartered in San Francisco with offices in Melbourne, Australia, Munich, Germany and Maidenhead, United Kingdom. For more information, visit [www.embarcadero.com](http://www.embarcadero.com).

### About CodeGear

CodeGear from Borland Software Corporation (NASDAQ: BURL) delivers innovative, high-productivity development tools for a wide spectrum of software developers ranging from individuals to enterprise teams. CodeGear products enable developers to freely develop on their platform of choice while focusing on simplifying complex technologies and tasks so they can concentrate on application design, not infrastructure, to enable on-time project delivery. With more than 3.2 million users in more than 29 countries, CodeGear supports some of the most demanding vertical industries including financial services, telecommunications, manufacturing, healthcare and government. To learn more about CodeGear and its products, visit [www.codegear.com](http://www.codegear.com). CodeGear. Where Developers Matter.

### About Thoma Cressey Bravo

Thoma Cressey Bravo is a leading private equity investment firm that has been providing equity and strategic support to experienced management teams building growing companies for more than 27 years. The firm originated the concept of "industry consolidation" or "build and buy" investing, which seeks to create value through the strategic use of acquisitions to accelerate business growth. Through a series of private equity funds, Thoma Cressey Bravo currently manages approximately \$2.0 billion of equity capital. In the software industry, Thoma Cressey Bravo has completed 34 acquisitions across 12 platform companies with total annual earnings in excess of \$500 million. For more information on Thoma Cressey Bravo, visit <http://www.tcb.com>.

### Forward-Looking Statements

Statements made in this release that are not historical facts are "forward-looking statements" and accordingly involve risk and uncertainties that could cause actual results to differ materially from those described in this release. Forward looking



2/8/2011

## Embarcadero Technologies to Acquire ...

uncertainties that could cause actual results to differ materially from those described in this release. Forward-looking statements include, for example, all statements relating to the closing of the transaction and the projected financial performance and plans and objectives of the combined businesses. The potential risks and uncertainties that could cause results to differ materially include, among others, the closing of the transaction and the ability of management to predict the financial and business performance. Neither Embarcadero nor Borland intend to update this information to reflect future events or circumstances unless required by law.

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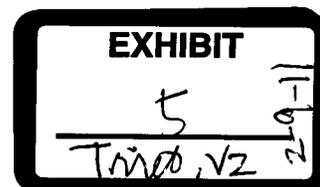
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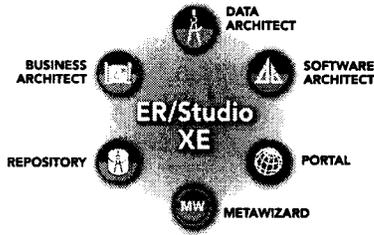
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# ER/Studio<sup>®</sup> XE

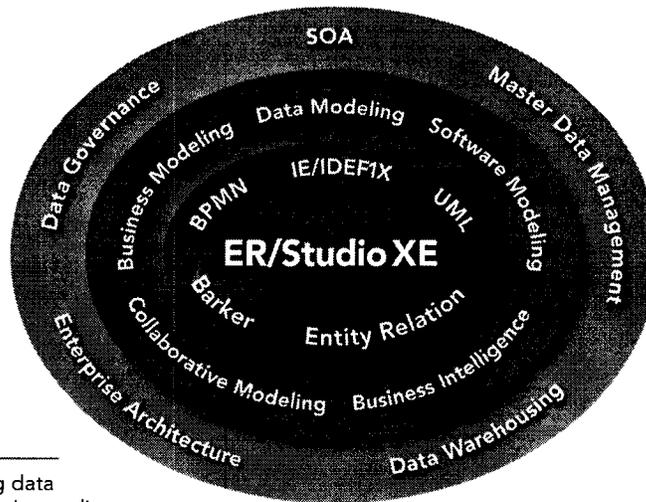
Enterprise design & modeling

**embarcadero**



ER/Studio XE is the fastest, easiest and most collaborative way for data management professionals to build and maintain enterprise-scale databases and data warehouses. Built in facilities automate routine modeling tasks so users can analyze and optimize database and data warehouse designs faster than ever. With a server-side model management system and online portal, it is simply the most productive way to share, document and publish your models and metadata to distributed teams.

- Enterprise class data modeling and design
- Business modeling for connecting process and data
- Object-oriented software modeling
- Server based repository collaborative modeling
- Real-time model business intelligence



## ENTERPRISE CLASS DATA MODELING AND DESIGN

ER/Studio XE, with its industry-leading data modeling capabilities, enables companies to discover, document, and re-use data assets. With round-trip database support, data architects have the power to easily reverse-engineer, analyze, and optimize existing databases. ER/Studio XE provides strong reporting and communication capabilities which can be used to enforce organizational standards and achieve higher levels of productivity.

## BUSINESS MODELING FOR CONNECTING PROCESS AND DATA

ER/Studio XE provides process and conceptual modeling to enable architects to easily document business processes and how they access data. Bringing together the simplicity of a drawing tool with the rich semantics of the BPMN standard, business users can easily model the relationships between processes, people and data.

## OBJECT-ORIENTED SOFTWARE MODELING

With rich object-oriented modeling features, application architects can visually analyze and design complex software applications. By supporting the UML 2.0 specification, it simplifies the design stage of a project by organizing and visualizing the requirements, subsystems, design patterns, and audit and metrics of intensive software systems.

## REAL-TIME MODELING BUSINESS INTELLIGENCE

ER/Studio XE includes a robust web-based query and reporting engine that allow users to access and search the ER/Studio Repository for improved understanding of metadata, object whereabouts, and data usage. It can be accessed via any web browser for cross-model and repository-wide data definition and object searches.

## SERVER BASED COLLABORATIVE MODELING

ER/Studio XE includes a server-side model management system that solves the day-to-day challenges of modeling data and business processes together where team collaboration, model access and data integrity are needed. It allows multiple users to be extremely productive on data and business process modeling projects with real-time concurrent access to a server based model management system that team members can share and re-use assets across projects.

## Design & Modeling Products

**ER/Studio<sup>®</sup> XE**  
Complete modeling and architecture solution combining data, process and UML modeling into a powerful multi-level design environment

**ER/Studio<sup>®</sup> Data Architect**  
Data modeling tool for analyzing, designing, creating, and maintaining database applications

**ER/Studio<sup>®</sup> Portal**  
Centralize self-service web portal for searching and reporting metadata contained in the ER/Studio Repository

**ER/Studio<sup>®</sup> Repository**  
Server-side model management system for collaborative team modeling

**ER/Studio<sup>®</sup> Business Architect**  
Business modeling tool for connecting process and data

**ER/Studio<sup>®</sup> Software Architect**  
Object-oriented modeling tool to visually analyze, design and implement complex application and data structures

**ER/Studio<sup>®</sup> MetaWizard**  
Integrate metadata across modeling tools, business intelligence, ETL platforms and industry-standard exchange formats (XMI, XML and XSD)

**ER/Studio<sup>®</sup> Viewer**  
View, navigate and print ER/Studio models in a view-only environment

**ER/Studio<sup>®</sup> Universal Data Models**  
Industry data model templates for ER/Studio that reduce development time and facilitate standardization

**Embarcadero<sup>®</sup> Schema Examiner**  
Automate error-checking and corrections for database schema to quickly and easily improve data quality and system performance

**EXHIBIT**

6

Trust V2

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## Select Features

**ER/Studio Data Architect**

"Where Used" Analysis with User-defined Mapping	Displays the mappings between logical entities and attributes and their implementation across physical designs. Allows data architects to customize the mapping of logical and physical artifacts for informational purposes.
Visual Data Lineage	Visually documents source/target mapping and sourcing rules for data movement across systems. Customize data flows with shapes.
Round-trip Database Support	Round-trip database support for forward and reverse engineering.
Advanced Compare and Merge	Enables advanced, bidirectional comparisons and merges of model and database structures such as logical-to-physical, physical-to-physical, physical-to-database, etc.

**ER/Studio Business Architect**

Conceptual Model Creation	Support for high-level conceptual modeling using elements such as subject areas, business entities, interactions, and relationships.
Process Model Creation	Support for straightforward process modeling that uses standard elements such as sequences, tasks, swim lanes, start events, and gateways
BPMN Compliance	Optional automatic validation of process diagrams to ensure compliance with the BPMN specification and prevent the addition of non-compliant modeling elements.
CRUD Reporting	CRUD reports identify which processes affect which data, and what affects they have. Reports are available in a straightforward spreadsheet view.

**ER/Studio Software Architect**

Model Driven Architecture & Standards	Support Unified Modeling Language™ (UML® 2.0), XML Metadata Interchange (XMI®), Query/ Views/Transformations (QVT) and Object Constraint Language (OCL).
Model Patterns	Provides powerful re-use facilities to jumpstart projects through predefined patterns.
Document Generation	Document generation facility and templates to create external documentation to track projects. Export formats to RTF, HTML, TXT, and PDF.
Quality Assurance	Analyze and measure ongoing projects with OCL-base model audits and metrics that can easily be defined, saved and re-used.

**ER/Studio Portal**

Structured Browsing & Navigation	Provides a web-based navigation of the repository diagrams. The user will be presented with a scrollable list of projects and the diagrams contained within each repository project folder.
Technical Reports	Pre-installed for implementation details such as data types, column width, column names, how objects are related, data lineage between models, and security classification information.
Automatic Data Synchronization	As diagram objects are added, deleted, or updated in the ER/Studio Repository, the most recent version of the diagram will be sent to the reporting portal. Synchronization can be scheduled at the administrator's discretion.
Advanced Searching	Wildcard searching with the ability to limit the search to specific object types or specific projects and specify a sort order.

**ER/Studio Repository**

Concurrent Model and Object Access	Allows real-time collaboration between modelers working on data models down to the model object level.
Reviewing Changes and Resolving User Conflict	Conflict resolution through simple and intelligent interfaces to walk users through the discovery of differences identified between a specific user's model and changes that have occurred simultaneously to the model by others connected to the Repository.
Version Management	Manages the individual histories of models and model objects to ensure incremental comparison between, and rollback to, desired diagrams and diagram elements.
Component Sharing and Reuse	Pre-defined Enterprise Data Dictionary that eliminates data redundancy and enforces data element standards.

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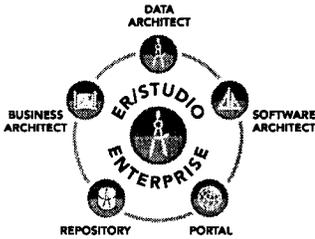
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# ER/Studio<sup>SM</sup> Enterprise

Enterprise Design & Modeling Suite

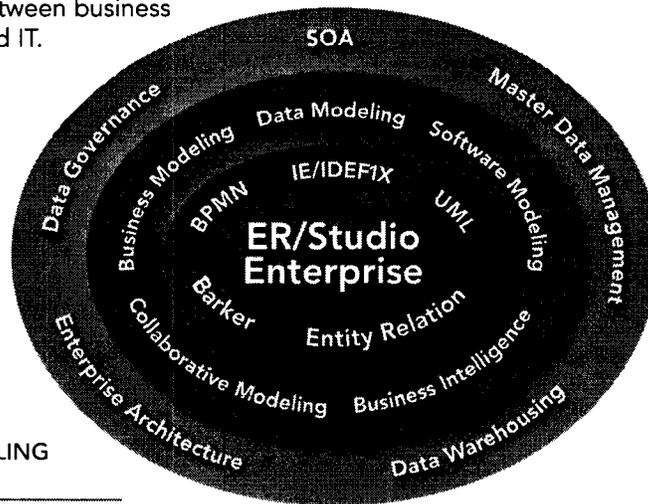


EMBARCADERO  
TECHNOLOGIES



The ER/Studio<sup>®</sup> Enterprise Suite is a powerful modeling and enterprise architecture solution that combines process, data, application modeling and reporting into a multi-level design environment. ER/Studio Enterprise enables data management professionals to understand, design and communicate software architectures across the organization for improved alignment between business and IT.

- Enterprise class data modeling and design
- Business modeling for connecting process and data
- Object-oriented software modeling
- Server based repository collaborative modeling
- Real-time model business intelligence



## ENTERPRISE CLASS DATA MODELING AND DESIGN

ER/Studio Enterprise, with its industry-leading data modeling capabilities, enables companies to discover, document, and re-use data assets. With round-trip database support, data architects have the power to easily reverse-engineer, analyze, and optimize existing databases. ER/Studio Enterprise provides strong reporting and communication capabilities which can be used to enforce organizational standards and achieve higher levels of productivity.

## BUSINESS MODELING FOR CONNECTING PROCESS AND DATA

ER/Studio Enterprise provides process and conceptual modeling to enable architects to easily document business processes and how they access data. Bringing together the simplicity of a drawing tool with the rich semantics of the BPMN standard, business users can easily model the relationships between processes, people and data.

## OBJECT-ORIENTED SOFTWARE MODELING

With rich object-oriented modeling features, application architects can visually analyze and design complex software applications. By supporting the UML 2.0 specification, it simplifies the design stage of a project by organizing and visualizing the requirements, subsystems, design patterns, and audit and metrics of intensive software systems.

## REAL-TIME MODELING BUSINESS INTELLIGENCE

ER/Studio Enterprise includes a robust web-based query and reporting engine that allow users to access and search the ER/Studio Repository for improved understanding of metadata, object whereabouts, and data usage. It can be accessed via any web browser for cross-model and repository-wide data definition and object searches.

## SERVER BASED COLLABORATIVE MODELING

ER/Studio Enterprise includes a server-side model management system that solves the day-to-day challenges of modeling data and business processes together where team collaboration, model access and data integrity are needed. It allows multiple users to be extremely productive on data and business process modeling projects with real-time concurrent access to a server based model management system that team members can share and re-use assets across projects.

## Key Features

- Model-Driven Design Environment
- Multi-level Design Architecture
- Visual Data Lineage
- Round-trip Database Support
- Software, Process, Physical and Logical Modeling
- Customized HTML, PDF, RTF Publishing & Reporting
- Diagram Layout Engines and Navigation
- Data Dictionary Standardization
- "Where Used" Analysis
- Collaborative Modeling Environment
- Multi-platform DBMS Support

## New! in ER/Studio 8.5

- Integrated modeling with a common set of tools to understand and design process, conceptual, physical and logical models in a collaborative, integrated and secure environment.
- Software modeling in a design-driven environment supporting UML 2.0, OCL, patterns, quality assurance audits and metrics, import/export, and automated documentation generation.
- Upgraded Visual Data Lineage to visualize, document and report data flows through the organization without inspecting code using advanced data visualization features.
- Updated DBMS features for the latest editions of Oracle, SQL Server, DB2 LUW, InterBase and Teradata.
- New Workflow Communication facilities with web 2.0 technologies like bi-directional commenting and tagging between ER/Studio Data Architect and Portal.
- Powerful and sophisticated reporting options enable users to create and share models and metadata in HTML, RTF, GIF, PNG and JPEG formats.

## Select Features

### ER/Studio Enterprise

#### ER/Studio Data Architect

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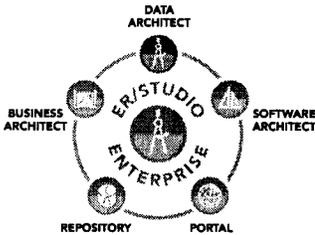
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# ER/Studio<sup>®</sup> Data Architect

Enterprise Data Modeling



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Embarcadero<sup>®</sup> ER/Studio<sup>®</sup> Data Architect is a industry-leading data modeling tool that helps companies discover, document, and re-use data assets. With round-trip database support, data architects have the power to easily reverse-engineer, analyze, and optimize existing databases. Productivity gains and enforcement of organizational standards can be achieved with ER/Studio's strong collaboration capabilities.

- Document and enhance existing databases
- Improve data consistency
- Effectively communicate models across the enterprise
- Trace data origins and whereabouts to enhance data integration and accuracy
- Model more than your data

## DOCUMENT AND ENHANCE EXISTING DATABASES

ER/Studio provides an easy-to-use visual interface to document, understand, and publish information about existing databases so that they can be better harnessed to support business objectives. Powerful reverse engineering of industry-leading database systems allow a data modeler to compare and consolidate common data structures without creating unnecessary duplication. Using industry standard notations, data modelers can create an information hub by importing, analyzing, and repurposing metadata from data sources such as business intelligence applications, ETL environments, XML documents, and other modeling solutions.

## IMPROVE DATA CONSISTENCY

Knowledge workers can spend significant amounts of time looking through data sources, researching what information means, and find that it is not being used appropriately. ER/Studio helps data architects define and reuse common data elements and modeling components across projects to establish standards in their modeling practices. By enforcing standards, and being able to analyze and document data elements, corporations can better understand and utilize their data and reduce redundancy.

## EFFECTIVELY COMMUNICATE MODELS ACROSS THE ENTERPRISE

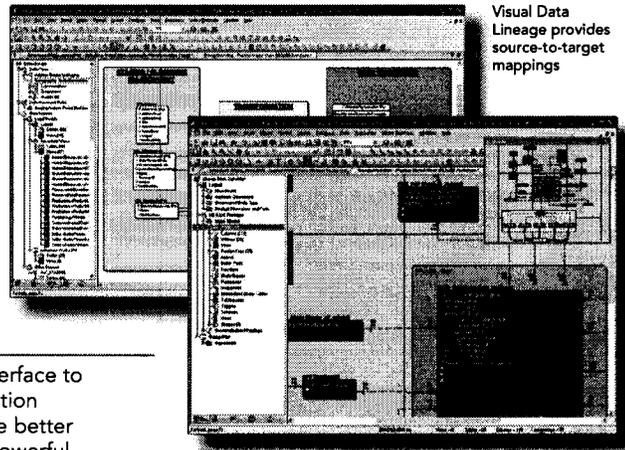
ER/Studio brings clarity to models and to complex business rule enforcement. The multilevel design layers allow for the accurate visualization of data, which promotes communication between business and technical users. Streamlined navigational aids, diagram layout utilities, and powerful report publishing functions simplify the communication of designs within and beyond the data modeling group. ER/Studio makes it easier to understand and communicate the current state of data throughout the enterprise, maintain corporate standards, and encourage appropriate data usage. Bringing all metadata into a central repository helps the transfer of knowledge among stakeholders, and allows users to easily see relationships and business rules that relate to their data.

## TRACE DATA ORIGINS AND WHEREABOUTS TO ENHANCE DATA INTEGRATION AND ACCURACY

With a clear understanding of where data originated and where it is used, organizations can be assured that they know what their data actually means and how it can best be utilized. The ER/Studio visual data lineage functionality provides data professionals with the ability to document how data flows through the organization. Attachments also allow organizations to append specific information to their models, thus enhancing documentation.

## MODEL MORE THAN YOUR DATA

Modeling isn't just for data and databases. Modeling provides a picture of relationships that can be easily understood, used for impact analysis, and helps make your organization more efficient. With ER/Studio you can use modeling to produce XML schemas to ensure the benefits of modeling are applied to applications and projects such as Service Oriented Architecture (SOA).



Visual Data Lineage provides source-to-target mappings

An easy-to-use user interface to document, design, and communicate data assets

## Product Editions

**ER/Studio<sup>®</sup> Data Architect**  
Provides complete environment for analyzing, designing, creating, and maintaining database applications.

**ER/Studio<sup>®</sup> Enterprise Upgrade from ER/Studio Data Architect**  
to Embarcadero's modeling and architecture suite that combines process, data, application modeling and a business intelligence engine into a powerful multi-level design environment.

## Related Products

**ER/Studio<sup>®</sup> Repository**  
A scalable, server-based, model management system

**ER/Studio<sup>®</sup> Portal**  
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Automate error-checking and corrections for database schema to quickly and easily improve data quality and system performance

# ER/Studio™ Data Architect

## Select Features

### Highly Productive Model-driven Design Environment

Advanced Graphics and Layout	Automatically creates highly readable, highly navigable diagrams
Multilevel Design Capabilities	Allows many physical designs from a core logical architecture
Automated and Custom Transformation	Streamlines the derivation of a physical design from a logical one and checks for normalization and compliance with the target database platform. Custom data type mapping and naming standards templates further streamlines this process
Denormalization Mapping	Allows physical database designers to optimize a physical design while maintaining ties to the logical artifacts
Extensible Automation Interface	Automates tedious, routine tasks such as coloring tables, enforcing and applying naming standards, globally updating storage parameters and integrating with other desktop applications such as Microsoft® Excel®, Word, or Access
Undo/Redo	Reverses the most recent sequence of operations in chronological order
Bi-Directional Object Commenting	Add workflow comments to model objects for documentation needs or for communicating ideas when collaborating on models. Comments are shared and accessed in both the Portal and the ER/Studio client
Multiple Presentation Formats	Publishes models and reports in a variety of formats including HTML, RTF, XML Schema, PNG, JPEG, DTD Output, and ER/Studio Viewer
Business Intelligence Portal	Online BI portal allowing organizations to query, analyze, browse, report and share information contained in the ER/Studio Repository. ER/Studio Portal is available in ER/Studio Enterprise

### Complete Database Lifecycle Support

Forward-engineering	Generates source code for some database designs
Reverse-engineering	Constructs a graphical model from an existing database or schema
Database Modification	Allows design changes made to the data model to be applied directly to a database by formulating intelligent alteration code

### Enterprise Model Management

Advanced Compare and Merge	Enables advanced, bi-directional comparisons and merges of model and database structures such as logical-to-physical, physical-to-physical, physical-to-database, etc.
Submodel Management	Allows creation of multileveled submodels, merging of submodel properties across existing models, and synchronization submodel hierarchies across disparate models
Metadata Integration	Imports and exports metadata from a variety of sources including BI platforms, UML and data modeling solutions, XML schemas, and CWM (common warehouse metamodel) to create a metadata hub
Data Dictionary Standardization, Enforcement and Reuse	Helps define and enforce standard data elements, naming standards, reference values and many other objects across any project. Facilitates impact analysis and support of standards across multiple models with domain inheritance, reusable objects, and automatic updates.
"Where Used" Analysis with User-defined Mapping	Displays the mappings between logical entities and attributes and their implementation across physical designs. Allows data architects to customize the mapping of logical and physical artifacts for informational purposes.
XML Schema Generation	Ensure XML projects such as those using Service Oriented Architecture (SOA) are based on the same standards and metadata as your data models by modeling them in ER/Studio and generating XSD from either the physical or logical model.
Repository for Team-centric Collaborative Modeling	Provides organizations using ER/Studio with a scalable, server-side, model management system that includes model and object version management, security management, and the ability to branch and merge models. ER/Studio Repository is available in the Enterprise edition.

### Data Warehouse and Integration Support

Visual Data Lineage	Visually documents source/target mapping and sourcing rules for data movement across systems
Dimensional Modeling	Leverages complex star and snowflake schema designs and supports the importation of its rich dimensional metadata from a variety of BI and data warehouse platforms

### Quality Database Design

Model Completion Validation	Automates model reviews and enforces standards with more than 50 checks to validate logical and physical models for missing object definitions, unused domains, identical unique indexes, and circular relationships
Automatic Migration of Foreign Keys	Maintains foreign keys to ensure referential integrity in designs
Capacity Planning	Manages row count and growth rates for tables and can calculate future storage requirements and forecasts future needs

### Security Design and Assessment

Data Classification	Categorizes and labels data and objects according to the level of security and privacy that should be applied to that information
Permission Management	Enables users, roles, and permissions modeling at the logical and physical level

### DBMS Support

<ul style="list-style-type: none"> <li>• Hitachi® HIRDB</li> <li>• IBM® DB2® 5.x, 6.x, 7.x, 8.x, 9.x for LUW; 5.x, 6.x, 7.x, 8.x, 9.x for z/OS®; and iSeries V4R5 and V5R2</li> <li>• Informix® OnLine and SE</li> <li>• Informix 9.x dynamic server</li> </ul>	<ul style="list-style-type: none"> <li>• InterBase® 4, 2007, 2009</li> <li>• Microsoft® Access 2.0, 95, 97, 2000</li> <li>• Microsoft SQL Server 7, 2000, 2005, 2008</li> <li>• Microsoft Visual FoxPro® 3, 4, 5</li> <li>• MySQL® 3.x, 4.x, 5.x</li> <li>• NCR® Teradata® V2R4, V2R5, V2R6, 12.0</li> </ul>	<ul style="list-style-type: none"> <li>• Oracle® 7.3.x, 8.x, 9i, 10g, 11g</li> <li>• PostgreSQL 8.x</li> <li>• Sybase® Adaptive Server® Enterprise (ASE) 11.9.2, 12.x, 12.5, 15.0</li> <li>• Sybase Adaptive Server Anywhere (ASA) 5, 6, 7, 8, 9, 10</li> <li>• Sybase IQ 12.5</li> <li>• Sybase Watcom SQL</li> </ul>
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### System Requirements

<b>Client System Requirements:</b> <ul style="list-style-type: none"> <li>• 100 MB of hard disk storage</li> <li>• 1 GB of RAM minimum, 2 GIG of RAM recommended</li> <li>• Pentium III, 600 MHz or higher</li> <li>• 1024x768 display resolution recommended</li> <li>• Windows 2000 Pro Server, Windows XP Professional, Windows 2003 (32-bit mode), Windows Vista, Windows Server 2008, Windows 7</li> <li>• Native Connections: Oracle, DB2 UDB (LUW, iSeries, and z/OS), SQL Server, and Sybase client libraries required</li> <li>• ODBC Connections: For databases ER/Studio supports via ODBC, a valid ODBC driver is required</li> </ul>	<b>Server Repository Requirements:</b> <ul style="list-style-type: none"> <li>• Pentium IV-class processor or higher</li> <li>• 50MB hard disk storage for installation required</li> <li>• 2 GB of RAM</li> <li>• Windows 2000, Windows XP, Windows 2003 Server, Windows Vista, Windows Server 2008</li> <li>• Native Connections: Oracle, DB2 UDB (LUW, iSeries, and z/OS), SQL Server, and Sybase client libraries required</li> </ul>
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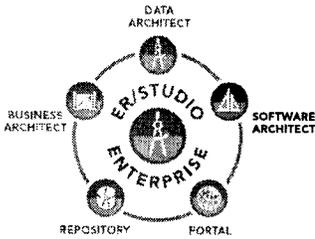
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# ER/Studio<sup>™</sup> Software Architect

Object-oriented Design and Analysis



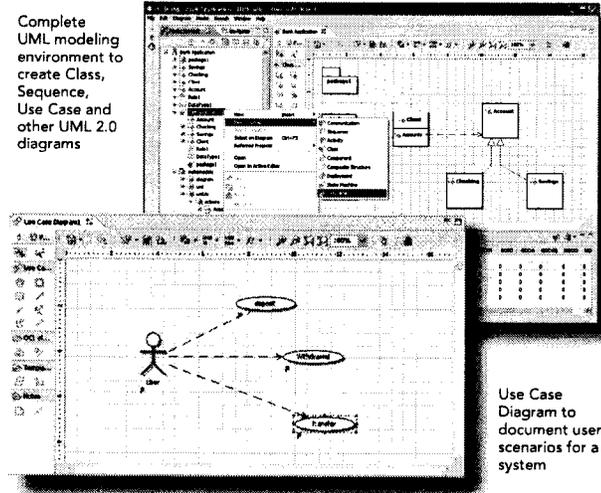
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Embarcadero<sup>®</sup> ER/Studio<sup>®</sup> Software Architect is an object-oriented modeling tool for application architects to visually design and analyze complex software applications. Supporting the UML 2.0 specification, ER/Studio Software Architect simplifies the design stage of a project by enabling developers and architects to organize and visualize the requirements, subsystems, design patterns, and audit and metrics of intensive software systems.

- Model driven architecture & standards
- Jumpstart applications with industry-standard patterns
- Ensure model quality with audits & metrics
- Improve project tracking with documentation generation

Complete UML modeling environment to create Class, Sequence, Use Case and other UML 2.0 diagrams



Use Case Diagram to document user scenarios for a system

## MODEL DRIVEN ARCHITECTURE & STANDARDS

ER/Studio Software Architect is built on the UML<sup>®</sup> 2.0 specification enabling organizations to adopt a model driven approach to their software design and analysis. Using this approach, architects and developers are better able to specify, visualize, and document models of entire software systems, and increase the automation of tasks around software modeling. Key features which make ER/Studio Software Architect an easy to use, highly productive environment include a model navigator, a diagram editor and palette and properties view. And, at the core of ER/Studio Software Architect is support for the most popular, widely adopted industry standards including XMI for UML 2.0 import/export, Object Constraint Language (OCL), and query/views/transformations (QVT).

## JUMPSTART APPLICATIONS WITH INDUSTRY-STANDARD PATTERNS & TEMPLATES

ER/Studio Software Architect provides software developers with a powerful capability to jumpstart projects through predefined patterns and templates. Users and teams are better equipped to handle the daily recurring problems that surface in the development lifecycle with reusable and proven design solutions. The industry standard patterns and templates can significantly improve the design and development of high quality software, leading to reduced software development costs, and greater flexibility and adaptability of the resulting software system. Both stock patterns (Gang of Four) and the ability to create custom patterns are available.

## ENSURE MODEL QUALITY WITH AUDITS & METRICS

Analyze, measure and validate ongoing projects with OCL-based model audits and metrics. Architects and developers can better automate the quality assurance and design of object oriented software with audits and metrics. The model audits and metrics can easily be defined, saved, and reused – saving time, improving quality and enabling better monitoring and inspection of ongoing projects. Users can run them from the command line, against one or more projects, a subset of a project, or on an individual element.

## IMPROVE PROJECT TRACKING WITH DOCUMENTATION GENERATION

Save time and keep project teams in sync with Software Architect's documentation generation facilities. Developers can easily create external documentation for open projects, or from the command line, using pre-defined or custom templates. Track projects, document pattern and profile definitions, or output the results of model audits into a number of different formats including RTF, HTML, TXT and PDF.

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## ER/Studio Software Architect

### General Features

Eclipse Platform	Based on the Eclipse 3.4 platform.
Sample Projects	Includes sample projects to familiarize users with features. Sample projects include Audit & Metrics, Patterns & Templates, Profile Definitions, UML Diagrams and UML 2.0 Notations.
Sample Cheat Sheets	Cheat sheets provide interactive tutorials to help users get started with key features in the product. Cheat sheets include defining and running model audits, creating patterns from scratch, and defining UML profiles.
Query/View/Transformation	Standard language to transform UML, BPMN, data models and custom model types.
Project Workspace	Contains all the resources for a user's work where project properties can be created including pattern definition projects, profile definition projects and UML 2.0 projects.
Packaged Elements	Logical and physical packages to group elements and store diagrams
Model Shortcuts	Model shortcuts make it easy to create multiple shortcuts to the same element on different model diagrams.
Model Hyperlinking	Model Hyperlinking makes it easy to create hyperlinks from diagrams to other system artifacts and browse them directly.
Import/Export	Interoperability is supported with various types of model import and export to XMI, MDL and MDX.
Project Documentation	Create external documentation for open projects. Documentation available for many different projects including, pattern definitions and audit results. Output formats include RTF, HTML, TXT, PDF and XSL-FO

### Modeling Features

Supported UML Specification	Supports UML 2.0 to visualize, specify, construct, and document the artifacts of the distributed objects systems.
UML in Color	Optional profile that will support the "modeling in color" methodology with support for roles, moment-interval, Mi-detail, party, place, thing and description.
UML 2.0 Diagrams	Supports the most frequently used diagrams and notations defined in the UML 2.0 specification including activity, class, use, component, composite, deployment, state machine and interaction diagrams.
UML Profiles	Includes pre-installed profiles and allows users to create profile definitions, including profile definition projects such as stereotypes, palette contributions, extensions and contributions.
EMF and UML Model Compare	Supports two-way and three-way EMF and UML model comparisons in a tree view. Results can be exported to an EMF XMI file.
Compare and Merge	Utilizes standard Eclipse synchronization APIs to provide integration with version control systems to compare and merge shared models.
Template Elements and Generics	Provides the ability to show templates, template signatures, parameters and template bindings in a UML 2.0 diagram
OCL Support	Object Constraint Language (OCL) 2.0 support for syntax highlighting, error validation, code completion and model queries.
Design Patterns	Design patterns that are available in stock patterns supporting Gang of Four, and custom design patterns.
Model Audits & Metrics	OCL-based model audits and metrics support model inspections which can easily be defined, saved, and reused.
Version Control	Version control systems in place to enable multiple users to work with the same modeling project. Supports version control systems that can be integrated into Eclipse

### System Requirements

- 220 MB hard disk space minimum (plus additional space during installation)
- Windows XP (SP3), Windows Vista (SP2)
- 1 GB memory (more recommended)
- High resolution monitor (1024x768 or higher, 256 colors)
- Any web browser that supports frames. Microsoft Internet Explorer 6.0 or later is recommended

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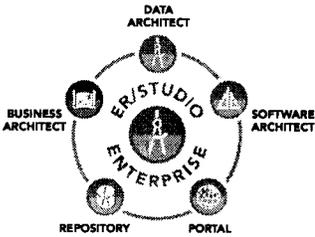
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# ER/Studio<sup>®</sup> Business Architect

Real-world Process and Conceptual Modeling



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Embarcadero<sup>®</sup> ER/Studio<sup>®</sup> Business Architect is a tool for creating a graphical representation of your business from the core concepts that describe the business, to the processes that detail how your business operates. ER/Studio Business Architect allows you to easily model your business processes and how those processes use data. ER/Studio Business Architect conceptual modeling provides an intuitive way to outline subject areas and concepts that can then drive the creation of detailed data models.

- Business process modeling based on the BPMN standard
- Conceptual modeling for top-down database design
- Align technology with business goals
- Compliance with government regulations

## BUSINESS PROCESS MODELING BASED ON THE BPMN STANDARD

With ER/Studio Business Architect, companies can easily document and understand their present day business processes, making it easy to examine, analyze, and recommend changes. After analysis, companies can then use ER/Studio Business Architect to design and codify changes to processes, and even manage and communicate interim processes used to affect those changes.

## CONCEPTUAL MODELING FOR TOP-DOWN DATABASE DESIGN

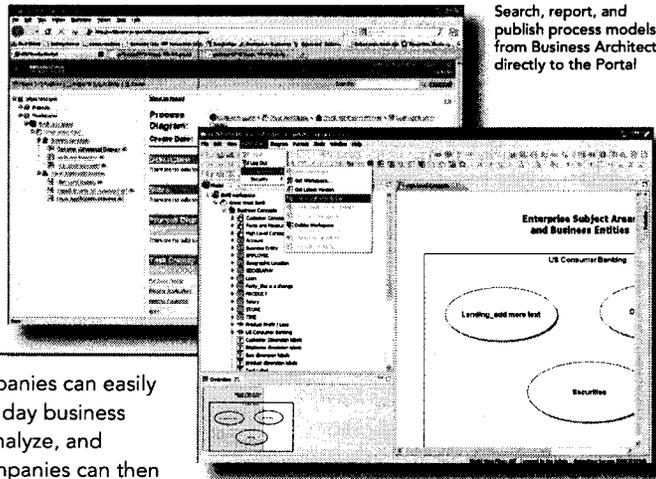
Using the conceptual modeling capabilities in ER/Studio Business Architect, it is easy to create a high-level visual representation of your business. This easily-understood model will help you get buy-in and clarification on requirements as you begin your top-down database or business process design.

## ALIGN TECHNOLOGY WITH BUSINESS GOALS

By modeling the relationships between business processes and their underlying data, companies are better able to take advantage of their technology. ER/Studio Business Architect makes it possible to do things such as identify all business processes that modify customer data, or determine which business users will lose productivity when a system outage occurs.

## COMPLIANCE WITH GOVERNMENT REGULATIONS

Tying together an understanding of business processes, what sensitive data elements they interact with, and what individuals are involved is a key element in reaching compliance with government regulations such as Sarbanes-Oxley, HIPAA, or Basel II. With ER/Studio Business Architect, both business and technical users can work together to assure the business meets appropriate government regulations.



Search, report, and publish process models from Business Architect directly to the Portal

Store ER/Studio Business Architect models in the ER/Studio Repository for collaborative modeling, version management and security benefits.

## Related Products

**ER/Studio<sup>®</sup>**  
A model-driven data architecture and database design solution.

**ER/Studio Repository**  
A scalable, server-based, model management system

**ER/Studio Portal**  
A browser-based solution allowing organizations to share, browse, and report on information contained in the ER/Studio Repository

**ER/Studio<sup>®</sup> Software Architect**  
Object-oriented modeling tool to visually analyze, design and implement complex application and data structures.

**ER/Studio Viewer**  
View, navigate and print ER/Studio models in a view-only environment

**ER/Studio MetaWizard**  
Integrate metadata across modeling tools, business intelligence, ETL platforms and industry-standard exchange formats (XMI, XML and XSD)

**ER/Studio Universal Data Models**  
Standard and industry data model templates for ER/Studio that reduce development time and facilitate standardization

**Embarcadero<sup>®</sup> Schema Examiner**  
Automate error-checking and corrections for database schema to quickly and easily improve data quality and system performance

**Embarcadero<sup>®</sup> All-Access<sup>™</sup>**  
Instant access to the languages, tools, and technologies to design, build, and run your software applications and database systems.

# ER/Studio™ Business Architect

## Select Features

### Conceptual Modeling

- Conceptual Model Creation** Support for high-level conceptual modeling using elements such as subject areas, business entities, interactions, and relationships
- Relationship Traceability** Model links between any conceptual or process modeling elements allowing you to trace relationships between models
- Conceptual Model Export** Conceptual models can be exported to Embarcadero ER/Studio to become the foundation for creating ER/Studio logical data models

### Business Process Modeling

- Process Model Creation** Support for straightforward process modeling that uses standard elements such as sequences, tasks, swim lanes, start events, and gateways
- BPMN Compliance** Optional automatic validation of process diagrams to ensure compliance with the BPMN specification and prevent the addition of non-compliant modeling elements
- Embedded Sub-process Support** Independent sub-processes and embedded collapsible sub-processes can be included within a business process to allow for maximum flexibility in diagramming, while still ensuring a workable visual diagram

### Impact Analysis Reporting

- Multi-object, Multi-level Reporting** Impact analysis reports can be generated to show interrelationships between process, data, stewardship, business rules, diagram usage, heritage, connecting objects etc.
- Report Filtering** Impact analysis reports can filter based on type of relationship, object type, or text strings including wildcard matching

### Usage (CRUD) Reporting

- Link Processes with Data** The relationships between business processes and data objects can be modeled to identify what processes create, read, update, and delete data objects
- CRUD Reporting** CRUD reports identify which processes affect which data, and what affects they have. Reports are available in a straightforward spreadsheet view.
- Report Filtering** Reports can be shown across object types, or can be filtered based on individual object type such as tasks, or business processes, allowing users to drill down based on specific requirements

### Business Artifact Modeling

- External Data Objects** Support for data objects which are general data storage constructs that can represent databases, file systems, or other data storage mechanisms
- Business Elements** Capture business terms that can later be used to enforce naming standards or as the foundation of logical data models
- Business Rules** Incorporate policies, practices or formulas related to business processes as part of the process model elements and metadata
- Business Units** Create and incorporate business units into process models such as sales, human resources, or accounting
- Stewardship** Support for inclusion of organizational roles such as 'DBA' or 'Sales Manager' to incorporate ownership for specific processes or tasks
- Links** Create generic associations between any object for impact analysis and CRUD reporting

### Powerful and Intuitive User Interface

- Organizational Hierarchies** ER/Studio Business Architect allows you to organize your information to align with your business strategy, allowing for a Project-based tree hierarchy which can group multiple model types and diagrams into intuitive projects to allow for alignment with business initiatives or organizations.
- Flexible Interface** Full support for multiple property editors, tab based navigation, undo-redo, collapsible nested tree views, zoom based navigation, and keyboard shortcuts
- Grid Editing** A table-based alternative to the hierarchical tree view, grid editing allows the display of large numbers of objects or business rules in an easy to read format
- Publish Models to Web** Automatically generate HTML views of your models to share with other people in your organization

### Import/Export

- Easily Share Information Across Multiple Roles and Formats** ER/Studio Business Architect makes it easy to share process models among a broad range of user groups by exporting them into a wide variety of supported formats including xml, csv, html, pdf, rtf, and jpeg
- ER/Studio Import/Export** Import and export Embarcadero ER/Studio models for use as data assets or Conceptual diagrams
- Visio Import** Configurable import capabilities let you import diagrams from Microsoft® Visio®
- ER/Studio Repository** Access to a server based repository for improved version control and collaborative work environment. Available in ER/Studio Enterprise.

### Robust Architecture

- Separation of Data and Display** ER/Studio Business Architect is based on a robust metadata foundation that allows core data to be manipulated and displayed in a variety of formats, without requiring a "picture" or diagram, speeding performance and increasing knowledge transfer across multiple constituencies
- Object Reuse** Core process and enterprise objects can be reused across multiple diagrams, allowing for a "single version of the truth" across the organization
- Standards-based** ER/Studio Business Architect is based on industry standards: Eclipse-based, XML file formats with published Schema, and BPMN modeling notations

## System Requirements

- CPU: 1.2 GHz
- RAM: 1 GB
- Disk Space: 250 MB
- Video: SVGA (2 MB) High resolution monitor (1024 x 768 or higher) with high color (16-bit)
- Microsoft Windows XP SP2, Vista 2007 and Windows 7

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# ER/Studio Repository

## Enterprise Modeling Collaboration

### ER/Studio Repository Key Benefits

- Facilitates real-time, concurrent access to diagrams between ER/Studio users
- Provides comprehensive history and version management control of diagram and diagram components
- Offers rich security through the implementation of repository users, user roles and user profiles
- Allows installation and management on leading relational database management systems

### Related Products

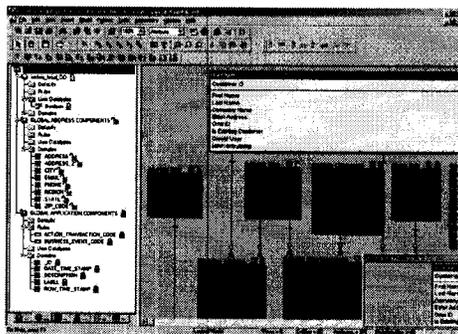
- **ER/Studio**  
Design, document and maintain databases and data warehouses for higher performance and quality.
- **Describe**  
Design, document and maintain enterprise applications written in Java, C++ and IDL for better code quality and shorter time to market.

ER/Studio Repository provides organizations using the award-winning ER/Studio data modeling application with a scalable, server-side, model management system. It is designed to enable real-time concurrent access to data models between team members, implement security to protect models and components from unwanted access and change, facilitate component sharing and re-use across projects and offer extensive model version management. ER/Studio Repository integrates seamlessly with the current workflow of ER/Studio, providing out-of-box efficiency to achieve higher modeling quality through the promotion of standards and ultimately through dramatic productivity gains by allowing work to progress concurrently and safely amongst modeling team members.

### Collaborative Modeling

ER/Studio Repository is designed to work the way modeling teams need to in order to deliver higher quality applications faster and more cost-effectively. As the scope of data modeling projects grow, so typically does the complexity and overhead needed for

object, like an attribute of an entity, at exactly the same time. Offering this 'deep' level of concurrent access eliminates the diagram-level lockout barrier faced by users of non-repository based products or modeling repositories incapable of this level of productive collaboration.



coordination and quality control of projects. ER/Studio Repository offers sophisticated means to help 'stabilize' this potential management nightmare giving modeling teams and managers complete control of their ongoing projects straight out of the box, while allowing modelers to work naturally and seamlessly with each other.

- **Concurrent Model and Object Access:**  
ER/Studio Repository allows real-time collaboration between modelers working on data models down to the model object level. Specifically, more than one modeler can be working on elements of the same

- **Conflict Resolution:** As on-going collaboration between data modelers progresses, so will come the eventuality of resolving conflicting data being submitted to the Repository from modelers working collaboratively. ER/Studio Repository offers simple and intelligent interfaces to walk users through the discovery of differences identified between a specific user's model and changes that have occurred simultaneously to the model by others connected to the Repository. Conflict resolution allows for selective, bi-directional control over updating between a users model and its Repository-based version.

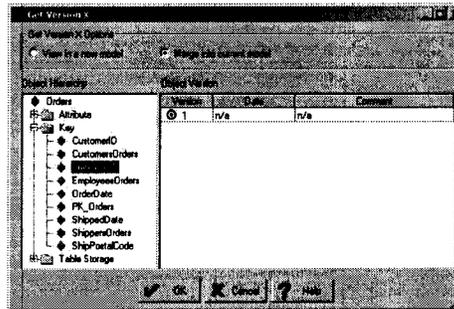
- **Component Sharing and Reuse:**  
ER/Studio Repository's Enterprise Data Dictionary introduces productivity capabilities stressing the elimination of data redundancy and enforcement of data element standards. Modeling project managers can create and implement pre-defined data dictionaries that can be reused and globally updated throughout any diagrams they are distributed to in the Repository. This approach lessens the likelihood of modelers' rebuilding the wheel' and defining

their own attributes and datatypes across models in addition to dramatic productivity gains in updating these elements in one place no matter where they have been distributed to within models.

- **Real-time Object Status Notification:** Modelers working concurrently with other team members always have a heads up view to recognize the current accessibility-state of an object directly through ER/Studio's modeling interface. ER/Studio Repository makes use of unique diagram symbols that display the state of a diagram or objects usage in the Repository. Users can see at any time which named user or users are currently accessing a particular model or object in the Repository in addition to seeing status changes as they are modeling.
- **"Detached" Collaboration:** Users who wish to work collaboratively with others do not necessarily need to be connected/tethered to the server. ER/Studio Repository extends its 'check out' capabilities to allow for complete detachment from the Repository server. The product maintains and traces the complicated referential integrity issues of a users check-out and will provide them with a thoughtful UI to review changes having occurred while detached from the Repository.
- **Project Creation:** ER/Studio Repository allows users to organize collections of diagrams into named 'Projects'. Projects group diagrams together for the purpose of allowing teams to organize Repository's contents in a meaningful way and allow security to be wrapped around the diagram collections by Roles assigned through Repository's security layer.

### Model and Object Version Management

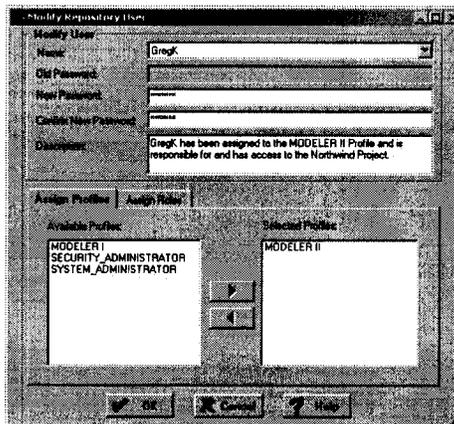
ER/Studio Repository provides rich support for model version management, designed to allow organizations to easily manage all successive states of models and model meta data. These capabilities allow teams to model with confidence and will facilitate the team's ability to track changes of models and individual model objects, set named releases of models and the ability to review and retrieve ('rollback') to prior model and object versions at any time.



- **Version Management:** ER/Studio Repository manages the individual histories of models and model objects to ensure incremental comparison between, and rollback to, desired diagrams and diagram elements.
- **Named Releases:** "Freezing" code is a common practice of application developers and is no different with respect to managing the succession of data models. ER/Studio Repository allows users to incrementally set Named Releases of models to allow for the capturing of snapshots to incrementally freeze project milestones.
- **Get Version:** The Get Version capability of ER/Studio Repository allows users to retrieve an earlier version of an object and view the object in a new model view for analysis purposes, and more importantly selectively choose what parts of the prior versions should be rolled back into the current object.

### Secure Collaborative Modeling

Repository-based collaborative modeling provides modeling teams significant advantages in controlling the state and safety of



ER/Studio Repository is designed to enable real-time concurrent access to data models, implement security, facilitate component sharing and re-use, and offer extensive model version management.

models and objects through the ability to apply user-defined layers of security. These capabilities help to protect work from being altered or even seen by those who do not have the required access to view, modify, edit, add or delete. ER/Studio Repository makes this process extremely easy through an entire Security User Interface.

- **Repository Security:** Repository security administrators can create comprehensive 'Profiles' that help to govern general accessibility privileges for Repository Users. Among the general privileges are the ability to log in to the Repository, add Users, create Profiles, and perform basic Repository operations.

- **Object Security:** Administrators may establish Object-level Security through the creation of User 'Roles' which ultimately provide ability to view, add, edit, or delete specific objects in specific diagrams. Roles may be associated with diagrams, Data Dictionaries, and Projects.

#### Simple Installation

Embarcadero's commitment to rapid installation and immediate out-of-box productivity continues with ER/Studio Repository. The product can be installed in minutes through an intuitive, guided wizard that walks the user through installation and start up of all server-side Repository Services as well as the Repository Database itself.

#### Open Architecture through industry-leading DBMS Installation

ER/Studio Repository installs on a variety of industry-leading Relational Database Management Systems and network platforms. This allows users to manage and query data from ER/Studio Repository as comfortably as they would any other production database. The RDBMS types supported through ER/Studio Repository's installation wizard are:

- Oracle® 8.1.x & 9.x
- IBM® DB2® UDB 6.x-7.x
- Sybase® Adaptive Server Enterprise 12
- Microsoft® SQL Server 7 & 2000

The ER/Studio Repository database component can be located on Windows NT™ and UNIX® network platforms.

#### System Requirements

The following system requirements are recommended for ER/Studio Repository

- 17 MB of hard disk storage recommended
- 32 MB of RAM recommended
- Windows NT 4 with Service Pack 4 or Windows 2000 Professional or Server



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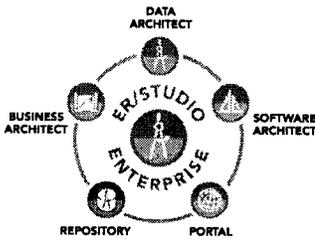
425 Market Street  
San Francisco, CA 94105  
Phone 415-834-3131  
Fax 415-434-1721  
sales@embarcadero.com  
www.embarcadero.com

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# ER/Studio<sup>®</sup> Repository

Enterprise Model Management



Embarcadero<sup>®</sup> ER/Studio<sup>®</sup> Repository is a server-side model management system that solves the day the day-to-day challenges of modeling data and business processes together where team collaboration, model access and data integrity are needed. The ER/Studio Repository allows multiple users to be extremely productive on data and business process modeling projects with real-time concurrent access to a server based model management system that team members can share and re-use assets across projects.

- Collaborative modeling with concurrent model and object access
- Model and Object Version Management
- Secure, scalable environment

## COLLABORATIVE MODELING

The ER/Studio Enterprise Repository is designed to work the way modeling teams need to in order to deliver higher quality applications faster and more cost-effectively. As the scope of data modeling projects grow, so typically does the complexity and overhead needed for coordination and quality control of projects. The ER/Studio Enterprise Repository offers sophisticated means to help 'stabilize' this potential management nightmare giving modeling teams and managers complete control of their ongoing projects straight out of the box, while allowing modelers to work naturally and seamlessly with each other.

## MODEL AND OBJECT VERSION MANAGEMENT

The ER/Studio Enterprise Repository provides rich support for model version management, designed to allow organizations to easily manage all successive states of models and model metadata. These capabilities allow teams to model with confidence and will facilitate the team's ability to track changes of models and individual model objects, set named releases of models and the ability to review and retrieve ('rollback') prior model and object versions at any time.

## SECURE COLLABORATIVE MODELING

Repository-based collaborative modeling provides modeling teams significant advantages in controlling the state and safety of models and objects through the ability to apply user-defined layers of security. These capabilities help to protect work from being altered or even seen by those who do not have the required access to view, modify, edit, add or delete. The ER/Studio Repository makes this process extremely easy through an entire security user interface.

## Product Editions

**ER/Studio Data Architect**  
Provides complete environment for analyzing, designing, creating, and maintaining database applications.

**ER/Studio Enterprise**  
Upgrade from ER/Studio Data Architect to Embarcadero's modeling and architecture suite that combines process, data, application modeling and a business intelligence engine into a powerful multi-level design environment.

## Related Products

**ER/Studio<sup>®</sup> Data Architect**  
A model-driven data architecture and database design solution.

**ER/Studio<sup>®</sup> Portal**  
A browser-based solution allowing organizations to share, browse, and report on information contained in the ER/Studio Repository.

**ER/Studio<sup>®</sup> Business Architect**  
Business modeling tool for connecting process and data.

**ER/Studio<sup>®</sup> Software Architect**  
Object-oriented modeling tool to visually analyze, design and implement complex application and data structures.

**ER/Studio<sup>®</sup> Viewer**  
View, navigate and print ER/Studio models in a view-only environment.

**ER/Studio<sup>®</sup> MetaWizard**  
Integrate metadata across modeling tools, business intelligence, ETL platforms and industry-standard exchange formats (XMI, XML and XSD).

**ER/Studio<sup>®</sup> Universal Data Models**  
Standard and industry data model templates for ER/Studio that reduce development time and facilitate standardization.

**Embarcadero<sup>®</sup> Schema Examiner**  
Automate error-checking and corrections for database schema to quickly and easily improve data quality and system performance.

## Select Features

### Collaborative Modeling

Concurrent Model and Object Access	Allows real-time collaboration between modelers working on data models down to the model object level.
Real-time Object Status Notification	Real time status icons that show check-out status of diagrams and objects contained in the Repository.
Reviewing Changes and Resolving User Conflict	Conflict resolution through simple and intelligent interfaces to walk users through the discovery of differences identified between a specific user's model and changes that have occurred simultaneously to the model by others connected to the Repository.
Component Sharing and Reuse	Pre-defined Enterprise Data Dictionary that eliminates data redundancy and enforces data element standards.
"Detached" Collaboration	Extends "check out" capabilities to allow for complete detachment from the Repository server and traces the complicated referential integrity issues of a users check-out and will provide them with a thoughtful UI to review changes having occurred while detached from the Repository.
Project Creation	Organize collections of diagrams into named 'Projects' and organize Repository's contents in a meaningful way and allow security to be wrapped around the diagram collections by Roles assigned through Repository's security layer.
Get Latest Version	Refreshes the local version of the open diagram with version in the Repository allowing multiple people to check out the same diagram and work on it simultaneously and easily update to the latest version.
Synchronized Object Check-in	The check-in process synchronizes the changes made to the local checked out item with the Repository version. Check in object and all modifications are merged in the Repository.

### Model and Object Version Management

Version Management	Manages the individual histories of models and model objects to ensure incremental comparison between, and rollback to, desired diagrams and diagram elements.
Named Releases	Allows users to incrementally set Named Releases of models to allow for the capturing of diagram snapshots to incrementally freeze project milestones.

### Secure Collaborative Modeling

Manage Repository Security	Repository Security is a simple to use visual interface to visually bind and associate Users to diagrams, objects and dictionaries with specific Roles they will play against those diagrams.
Manage Repository Users	A visual interface allows for the creating, updating, deleting, and deactivating/reactivating (e.g. "hibernation") of all Users.
Manage Repository Roles	Create and administer entire 'teams' through the Role system with a set of permissions that are created for purpose-specific needs to prevent unwanted access or modification to various elements managed in the ER/Repository.
Administrative User Management	Perform administrative tasks to manage users logged in and working in the Repository.

## Server Repository Requirements

- Pentium IV-class processor or higher
- 50MB hard disk storage for installation required
- 2 GB of RAM
- Windows 2000, Windows XP, Windows 2003 Server, Windows Vista and Windows Server 2008
- Native Connections: Oracle, DB2 UDB (LUW, iSeries, and z/OS), SQL Server, and Sybase client libraries required

## DBMS Support

- IBM® DB2®: 5.x, 6.x, 7.x, 8.x, 9.x for LUW; 5.x, 6.x, 7.x, 8.x for z/OS®; and iSeries V4R5 and V5R2
- Microsoft SQL Server 7, 2000, 2005, 2008
- Oracle® 7.3.x, 8.x, 9i, 10g, 11g
- Sybase® Adaptive Server® Enterprise (ASE) 11.9.2, 12.x, 12.5, 15.0

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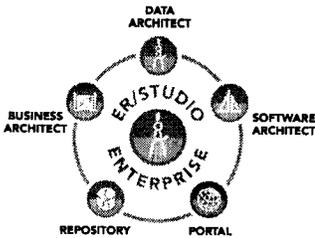
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# ER/Studio<sup>®</sup> Portal

Advanced Metadata Query and Reporting



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Embarcadero<sup>®</sup> ER/Studio<sup>®</sup> Portal is a web-based query and reporting tool to access and search the ER/Studio Repository for improved understanding of metadata, object whereabouts, and data usage. The Portal can be accessed via any web browser for cross-model and repository-wide data definitions and objects searches.

- Real-time metadata information and access
- Advanced ad-hoc query and reporting
- Powerful administrative and security console

## REAL-TIME METADATA INFORMATION AND ACCESS

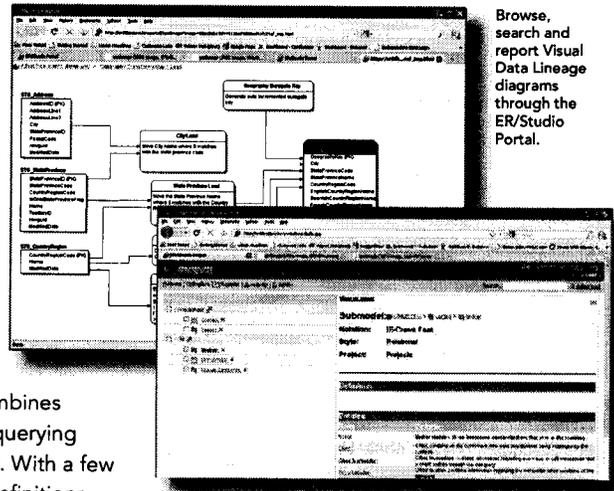
ER/Studio Portal is a powerful online metadata query and reporting tool that combines portal and search technologies. It delivers querying and data reporting specific to a user's need. With a few clicks, users can easily access data model definitions and objects stored in the repository. The Portal delivers data modelers, data architects, developers, business analysts, and data stewards with up-to-date information. By providing real-time access and configurable reports of all the data models and repository metadata, the Portal facilitates improved metadata consistency and better collaboration.

## ADVANCED AD-HOC QUERY AND REPORTING

ER/Studio Portal provides an easy-to-use interface with structured hierarchical information browsing and navigation through detailed drill-downs. With both simple and advanced search features, users can customize their search term by "starts with", "contains", "ends with", "is an exact match of", or even limit the search to specific object types or specific ER/Studio diagrams. With more than 20 out-of-the-box reports, users can quickly execute a report on an entity, submodel, or model and drill down to the detailed report for each object type. These reports are then easily exportable to HTML, PDF, or XLS to share with other users.

## POWERFUL ADMINISTRATIVE AND SECURITY CONSOLE

ER/Studio Portal is an intelligent platform that allows administrators to control and customize the application interface, administer user permissions, and manage schedules and repository data synchronization all from one page. Administrators can customize the menus and reports for specific users or groups as well as specify their own logo to provide their own corporate look and feel. Administrator access to the Portal's security center makes it easy to manage security and access to the content. Users are authenticated against the access control list in ER/Studio Repository prior to running queries, allowing the data architect to control which content is published to the Portal. Through the console, administrators can maintain access controls, manage schedules, manage subscriptions, and refresh the settings



Browse, search and report Visual Data Lineage diagrams through the ER/Studio Portal.

Add object labels and comments to organize and customize detailed reports.

## Related Products

**ER/Studio<sup>®</sup> Data Architect**  
A model-driven data architecture and database design solution.

**ER/Studio<sup>®</sup> Portal**  
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View, navigate and print ER/Studio models in a view-only environment.

**ER/Studio<sup>®</sup> MetaWizard**  
Integrate metadata across modeling tools, business intelligence, ETL platforms and industry-standard exchange formats (XML, XML and XSD).

**ER/Studio<sup>®</sup> Universal Data Models**  
Standard and industry data model templates for ER/Studio that reduce development time and facilitate standardization.

**Embarcadero<sup>®</sup> Schema Examiner**  
Automate error-checking and corrections for database schema to quickly and easily improve data quality and system performance.

## Select Features

### User Searching & Browsing

Structured Browsing & Navigation	Provides a web-based navigation of the repository diagrams. The user will be presented with a scrollable list of projects and the diagrams contained within each repository project folder.
Simple Searching	Searches text properties of all object types and diagrams for a partial match on the search string supplied by a user.
Advanced Searching	Wildcard searching with the ability to limit the search to specific object types or specific projects and specify a sort order.
Business Reports	Pre-installed reports geared toward business analysts looking for information such as business names, definitions, and object whereabouts.
Technical Reports	Pre-installed for implementation details such as data types, column width, column names, how objects are related, data lineage between models, and security classification information.
Saved Reports	Displays all reports or searches the user chooses to execute in the background; are saved and can be viewed without re-execution.
Drill Down Details	Ability to drill down to the Detail Report for each object type, to the Diagram Detail Report, or to display results in another format.

### Security

Secure Login	Authenticates users prior to running queries and reports. Users are required to type in a user name and password that is stored in the ER/Studio Repository.
Role Based Permissions	Permissions are granted based on a user or role accessing an action sequence. Identities are authenticated against a user name and password in the ER/Studio Repository.

### Administrator Services

Administrator Page	Administration page to maintain access controls, manage schedules, manage subscriptions, and refresh the BI Server settings.
Automatic Data Synchronization	As diagram objects are added, deleted, or updated in the ER/Studio Repository, the most recent version of the diagram will be sent to the reporting portal. Synchronization can be scheduled at the administrator's discretion.
Diagram Filtering	Ability to filter, by diagram, the content that flows from the ER/Studio Repository to the reporting database.
Portal UI Style Customization	Allows customization of the portal style, layout, and content schemes. Easily change banner, menu bar, and content style, including colors, images, titles, and fonts.
Custom Reporting	Enables administrators to generate a model, dictionary, or data lineage business report and choose the content items, format, sort, aggregation, and filter criteria. The generated reports can be saved, shared, and rerun at a later date by the author and other users.
Out-of-the-Box Template Reports	Administrators can access out-of-the-box and ER/Studio-themed templates to create custom business, technical and impact analysis reports.

## DBMS Support

- IBM® DB2® UDB LUW 7.x, 8.x, and 9.x Server
- Microsoft SQL Server 7.0, 2000, 2005, 2008
- Oracle® 8-9i, 10g, 11g

## System Requirements

- ER/Studio Repository
- Processor – Pentium Class 4-CPU or higher
- RAM – 3 GB minimum
- Hard drive space – 300 MB minimum for installation
- OS Support for Web Server – Windows 2000 (Server edition), Windows 2003 Server and Windows 2008 Server
- Web browser (at minimum) – Mozilla Firefox 2.0, Microsoft Internet Explorer 6.0, Netscape 7.2, or Safari

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Corporate Headquarters | Embarcadero Technologies | 100 California Street, 12th Floor | San Francisco, CA 94111 | [www.embarcadero.com](http://www.embarcadero.com) | [sales@embarcadero.com](mailto:sales@embarcadero.com)

# Universal Data Models

For Embarcadero™ ER/Studio™



EMBARCADERO  
TECHNOLOGIES

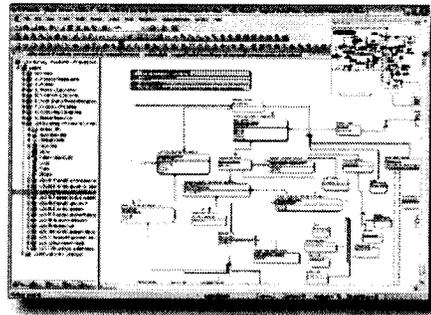


Universal Data Models, an industry-standard set of data model templates developed by renowned author and modeling expert Len Silverston, are now available for Embarcadero® ER/Studio®. These time-proven templates have been continuously improved during the last 15 years and implemented by hundreds of companies, providing them with a complete set of data models that ensure quality, reduce development time, and facilitate standardization of existing data models and definitions.

- Achieve high-quality models
- Reduce development time
- Improve consistency and standardization

## ACHIEVE HIGH-QUALITY MODELS

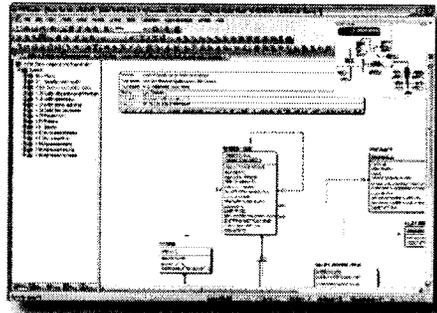
The Universal Data Models (UDMs) were developed by a team of experienced data modelers, led by Len Silverston. The templates have been refined based on hundreds of implementations and are laid out for easy navigation, including full attributes and detailed definitions for every attribute. They make sophisticated data models more accessible to small and medium-sized businesses that previously had to forego them due to budget or IT constraints. The models are available for nine different subject areas as a complete and integrated corporate model, and seven industry-specific add-ons.



*Model your entire organization, including the specialized needs found in your unique industry.*

## REDUCE DEVELOPMENT TIME

The UDMs are available for ER/Studio, reducing development time and ensuring quality. The templates arm users with a powerful set of data models and data warehouse designs that jump-start database development projects. They include proven models for common business functions such as ordering and managing products, handling shipments, invoicing, accounting and budgeting, managing human resources, contact management, and project management. New models can be laid out and categorized into subject data areas with ER/Studio's easy-to-use format, reducing data model development and maintenance time by an average of 60 percent, as well as improve the quality of existing data models. Users can save even more time with the industry-specific extensions for Healthcare; Telecommunications; Manufacturing; Banking, Investments, & Financial Services; Insurance; Professional Services; and Travel.



*Subject Area Models provide a focused model of common organizational activities.*

## IMPROVE CONSISTENCY AND STANDARDIZATION

The Universal Data Models enable users to be consistent with other organizations and improve quality assurance by referencing hundreds of integrated, "best practice" models. UDM customers can refer to a standard, proven source for models that are easily able to handle conflicting opinions regarding data modeling. All of the models contain a full set of entities, relationships, attributes, and detailed definitions. The models are also a great resource for enterprise data modeling, master data management, data warehouse, data governance, data quality, metadata, data dictionary standardization, and any effort where data models can help.

## Related Products

### ER/Studio®

A model-driven data architecture and database design solution.

### ER/Studio® Viewer

View, navigate, and print ER/Studio models in a view-only environment.

### MetaWizard

Integrate metadata across modeling tools, business intelligence, ETL platforms, and industry-standard exchange formats (XMI, XML, and XSD).

### Embarcadero®

### Schema Examiner™

Automate error-checking and corrections for database schema to quickly and easily improve data quality and system performance.

### Embarcadero®

### All-Access™

Instant access to the languages, tools, and technologies to design, build, and run your software applications and database systems.

Features	Description
<b>Subject Area Corporate Models</b>	
The subject area data models provide a framework and re-usable constructs for common corporate subject areas and are a jumpstart for any company working on specific modeling efforts or striving to define a common data model. Each entity includes primary keys, foreign keys (when applicable), and full descriptions for both entities and attributes.	
People & Organizations	Includes entities such as PARTY, PARTY ROLE, ORGANIZATION, PERSON, and POSTAL ADDRESS
Product	Includes entities such as PRODUCT, SERVICE, GOOD, FEATURE TYPE, and INVENTORY ITEM
Orders & Agreements	Includes entities such as ORDER, AGREEMENT, REQUIREMENT, QUOTE, and RFP
Shipments & Deliveries	Includes entities such as SHIPMENT, RECEIPT, ISSUANCE, SHIPPING DOCUMENT, and SHIPMENT ROUTE SEGMENT
Work Effort & Project Management	Includes entities such as WORK REQUIREMENT, WORK EFFORT, TIME ENTRY, and RATE TYPE
Invoice & Time Billing	Includes entities such as INVOICE, BILLING ACCOUNT, PAYMENT, and FINANCIAL ACCOUNT
Accounting & Budgeting	Includes entities such as GENERAL LEDGER ACCOUNT, ACCOUNTING TRANSACTION, BUDGET, BUDGET SCENARIO, and PLANNING TRANSACTION
Human Resources	Includes entities such as EMPLOYEE, POSITION, RESPONSIBILITY TYPE, SKILL TYPE, SALARY, and BENEFIT
Web and e-Commerce	Includes entities such as USER PREFERENCE, WEB ADDRESS, OBJECT CONTENT FRAME, SERVER HIT, and WEB VISIT

Industry-Specific Models	
The industry area data models provide a framework and re-usable constructs for various industry areas and are a jumpstart for any company working on a modeling effort within a particular industry or striving to define a common data model. The models include all the subject area corporate models shown above that are integrated into the industry constructs. Each entity has primary keys, foreign keys (when applicable), and full descriptions for both entities and attributes.	
Repository for Banking, Investments, & Financial Services	Includes entities such as ACCOUNT, INVESTMENT VEHICLE, SECURITY, SAVINGS ACCOUNT, OBJECTIVE, RISK ANALYSIS, PERFORMANCE CHARACTERISTIC TYPE, YIELD TYPE, FINANCIAL POSITION, MORTGAGE, SCHEDULED PAYMENT DUE, FINANCIAL AGREEMENT, and ACCOUNT NOTIFICATION
Repository for Healthcare	Includes entities such as PATIENT, INSURED PARTY, INSURANCE PROVIDER, HOSPITAL, MEDICAL OFFICE, HEALTH CARE VISIT, HEALTH CARE EPISODE, CLAIM, and SETTLEMENT
Repository for Insurance	Includes entities such as INSURANCE AGENCY, PAYOR, INSURANCE PRODUCT, COVERAGE LEVEL, COVERAGE TYPE, ACTUARIAL ANALYSIS, RATE, APPLICATION, QUOTE, INSURANCE POLICY, PREMIUM SCHEDULE, and CLAIM
Repository for Manufacturing	Includes entities such as DISTRIBUTION CHANNEL, PART, RAW MATERIAL, PART SPECIFICATIONS, ENGINEERING CHANGES, MANUFACTURING BOM, MANUFACTURING ORDER, and PROCESS PLAN
Repository for Professional Services	Includes entities such as PROFESSIONAL RESOURCE REQUIREMENT, SKILL TYPE, RFI, RFQ, RFP, ENGAGEMENT, ENGAGEMENT RATE, PROFESSIONAL ASSIGNMENT, SERVICE ENTRY, and WORK EFFORT
Repository for Telecommunications	Includes entities such as TELECOMMUNICATIONS CARRIER, REGULATORY AGENCY, NETWORK COMPONENT, NETWORK ASSEMBLY, DEPLOYMENT, and SERVICE ORDER
Repository for Travel	Includes entities such as TRAVELER, TRAVEL PREFERENCES, TRAVEL RESERVATION, TICKET, SALE, SCHEDULED TRANSPORTATION, ACCOMMODATION CLASS, and TRAVEL EXPERIENCE

System Requirements
<ul style="list-style-type: none"> <li>• ER/Studio 7.1 or higher</li> <li>• 2 MB per Subject Area Model</li> <li>• 10 MB per Industry Model or Integrated Corporate Model</li> </ul>

Download a Free Trial at [www.embarcadero.com](http://www.embarcadero.com)

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Home > Products > ER/Studio > ER/Studio XE > DBMS Support



## ER/Studio DBMS Support

### Data Architect

- Hitachi® HIRDB
- IBM® DB2® for LUW: 5.x, 6.x, 7.x, 8.x, 9.x
- IBM® DB2® for OS/390: 5.x, 6.x, 7.x, 8.x, 9.x
- IBM® DB2® for AS/400: V4R5 and V5R2
- IBM® DB2® for Common Server
- Informix® OnLine, SE and 9.x
- InterBase® 4, 2007, 2009
- Microsoft® Access 2.0, 95, 97, 2000
- Microsoft SQL Server 7, 2000, 2005, 2008
- Microsoft Visual FoxPro® 3, 5
- MySQL® 3.x, 4.x, 5.x
- Netezza 4.6, 5.0
- Teradata® V2R4, V2R5, V2R6, 12.0
- Oracle® 7.3.x, 8.x, 9i, 10g, 11g
- PostgreSQL 8.x
- Sybase® Adaptive Server® Enterprise (ASE) 11.9.2, 12.x, 12.5, 15.0
- Sybase Adaptive Server Anywhere (ASA) 5, 6, 7, 8, 9, 10
- Sybase IQ 12.5
- Sybase Watcom SQL
- Sybase SQL Anywhere 5
- ODBC/ANSI SQL

### Repository

- IBM® DB2®: 9.x for LUW
- Microsoft SQL 2005, 2008
- Oracle® 10g, 11g
- Sybase® Adaptive Server® Enterprise (ASE) 12.5, 15.0

### Portal

- IBM® DB2® 9.x for LUW
- Microsoft SQL Server 2005, 2008
- Oracle® 10g, 11g

### ER/STUDIO XE

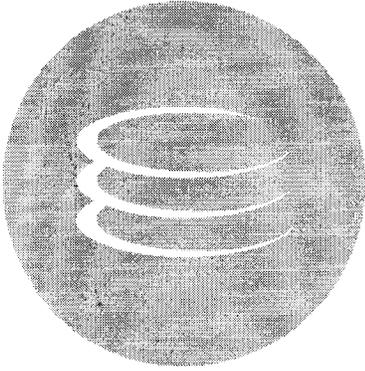
- [Data Sheet \(PDF\)](#)
- [DBMS Support](#)
- [System Requirements](#)
- [Related Products and Add Ons](#)
- [Documentation](#)

### ER/STUDIO RESOURCES

- [Why ER/Studio?](#)
- [FAQ](#)
- [Feature Comparison \(PDF\)](#)
- [Product Editions](#)
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# Embarcadero ER/Studio Software Architect 1.0

EXHIBIT  
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**Password file**

The password provider mechanism can be bypassed if you specify the "-eclipse.password <file path>" runtime option. In this case the contents of the file you specified as the argument will be used as a master password. While this option is valuable in some circumstances (such as headless applications), the protection of the password file becomes a consideration. The password file can be protected by the operating system access rights and/or by placing it on a removable storage, such as a USB key.

## User interface information

**Contents**

- [Development Environment](#)
- [Views and Editors](#)
- [Wizards](#)
- [Help Contents](#)
- [Search](#)
- [Workbench Menus](#)
- [Icons and Buttons](#)

## Development Environment

**Contents**

- [Workbench Toolbar](#)
- [Perspective Bar](#)
- [Fast View Bar](#)
- [View Toolbars](#)
- [Perspective](#)
- [Local History](#)
- [List of Key Binding](#)
- [Switching Workspaces](#)

**Workbench Toolbar**

The Workbench toolbar is displayed at the top of the Workbench window, directly underneath the menu bar. The contents of the toolbar change based on the active editor. Actions in the toolbar may apply to particular views, so these actions may be enabled or disabled based on the state of the currently active view or editor.

**New Wizard**

This command brings up a dialog where you can choose the type of resource to create.

### **Save The Open Editor Contents**

This command saves the file currently displayed in the editor area.

### **Print**

This command opens a dialog which allows you to specify where you would like to print the contents of the file currently being displayed in the editor.

### **External Tools**

This command presents a drop-down menu which allows you to run or configure external tools.

### **Search**

This command opens the search dialog, which allows you to search the workspace for specified text.

### **Navigation**

This tool group contains a variety of editor navigation commands.

### **Perspective Bar**

The perspective bar allows quick access to perspectives that are currently open, as well as providing an easy way to open a new perspective. The perspective bar may be docked in three different positions. It may be docked in the upper right corner (the default position), the upper left corner (under the main toolbar) and to the far left.

### **Open Perspective**

This command opens a new perspective that is selected from a drop-down menu. All of the perspectives that are open within a single Workbench window are shown on the shortcut bar.

### **Perspective Buttons**

These buttons provide a quick way to switch to one of the open perspectives in the current Workbench window.

### **Available Perspectives**

There are several available perspectives, while one is set as a default, others can be manually added to the perspective bar. To add new perspectives to your workspace, click **Open Perspective**, select **Other** and choose from the following available perspectives:

- CVS Repository Exploring;
- Debug;
- Plug-in Development;
- Resource;
- Team Synchronizing.

### **Fast View Bar**

The fast view bar is the place where fast views are docked. It may be docked on any side of the workbench

### View Buttons

These buttons provide a quick way to display the fast views in the current perspective. Fast views are essentially minimized views that have been dragged onto the shortcut bar. Fast views pop up when selected, and revert back to their minimized state when you click outside of the view. They may be oriented either horizontally or vertically according to their configuration. To convert a fast view back into a normal view, click **Fast View** in the view's menu or drag it back to the workbench. To add a view to the fast view bar you can:

- Click the button on the left of the fast view bar. This will open a menu containing the views appropriate to the current perspective.
- Right click the view in the workbench and select **Fast View**.
- Drag the view from the workbench to the Fast View bar.

### View Toolbars

View toolbars contain actions that apply only to the particular view in which they appear. The view toolbar also contains a context menu that contains other actions for that view. This menu is opened by clicking on the downwards pointing triangle. If there is enough space, view toolbars are in the view tab area. Otherwise they appear in the view.

### Title Bar

View title bars contain the view name, its icon, and the view toolbar.

### Perspective

A perspective defines the initial set and layout of views in the Workbench window. One or more perspectives can exist in a single Workbench window.

Perspectives can be opened either in the same (existing) Workbench window, hiding the current perspective, or in a new Workbench window

Perspectives define visible action sets, which you can change to customize a perspective. You can save a perspective that you build in this manner, making your own custom perspective that you can open again later.

The Workbench defines the *Resource* perspective by default. This perspective shows views relevant to resource management.

### Local History

Local history of a file is maintained when you create or modify a file. Each time you edit and save a file, a copy of it is saved. This allows you to compare your current file state to a previous state, or replace the file with a previous state. Each state in the local history is identified by the date and time the file was saved.

Neither projects nor folders have local history. Local History is displayed in the History View.

To view the local history of a file, choose **Team > Show Local History** from the pop-up menu. This will bring up the History view and populate it with the revisions of the selected file. You can open different revisions from the table (by using **Open** from the context menu or by double clicking on a revision), compare them against the latest revision or against a previous revisions (by using **Compare With Revision** from the context menu), and replace the current revision with the contents of a previous revisions (by using **Get Contents** from the context menu).

**NOTE:** Projects that are managed by CVS now have the local history revisions displayed alongside remote revisions. In order to see the local history for a CVS managed file, select the **Team > Show History** menu item and make sure that the History View is one of the modes capable of showing local history.

**Toolbar - Refresh**

This command refreshes the contents of the view, fetching the latest history information for the resource from the server.

**Link with Editor and Selection**

When enabled, the view will display the history for the resource of the active editor or of the active selection.

**Pin**

When enabled will pin the view and its contents. Any new requests for history will open a new instance of the History View.

**Group Revisions by Date**

When enabled, all history items will be sorted into one of the following date categories:

- Today
- Yesterday
- This Month
- Previous

**Collapse All**

Will the view is in the Group by Date mode, Collapse All will collapse all of the date categories.

**Compare Mode**

When enabled, a double click (or a single click depending on your Open Mode strategy set in **Preferences > General**) will open a compare editor. When it is disabled, clicking on a revision will open that revision.

**Context menu**

From the context menu of the Local History view you can perform the following operations:

**Open**

This command will open the contents of the selected revision in a read only editor. (The editor used is the one that is registered as the default editor for the file type). *Note:* If the revision being opened is the current version of the file, then it will be opened in a regular editor.

**Compare Current With Revision/Compare With Each Other**

The compare command differs based on the number of revisions selected in the history view. For a single selection, **Compare Current With Revision** will compare the current version of the resource with the selected revision. For two selections, **Compare with Each Other** will compare the selected revisions.

**Get Contents**

This command will load the contents of the selected revision into the local copy of the file whose history is displayed in the view.

## List of Key Binding

The list of available key bindings in Eclipse depends on many factors, including what view or editor is selected, whether a dialog is open, what plug-ins are installed, and what operating and windowing system is being used. At any time, you can obtain a list of available key bindings using Key Assist (Help > Key Assist... or Ctrl+Shift+L). The following tables list some popular key bindings available in the Eclipse SDK.

New	Create a element or a new resource. Configure which elements are shown in the submenu in Window > Customize Perspective.	Ctrl + N
Close	Close the current editor. If the editor contains unsaved data, a save request dialog will be shown	Ctrl + F4
Close All	Close all editors. If editor contains unsaved data, a save request dialog will be shown.	Ctrl + Shift + F4
Save	Save the content of the current editor. Disabled if the editor does not contain unsaved changes.	Ctrl + S
Save As	Save the content of the current editor under a new name.	
Save All	Save the content of the current editor under a new name.	Ctrl + Shift + S
Print	Prints the content of the current editor. Enabled when an editor has the focus.	Ctrl + P
Properties	Opens the property pages of the select elements.	Alt + Enter

## Switching Workspaces

The current workspace for Eclipse can be switched by using the **File->Switch Workspace** command. If you have already switched your workspace previously the previous workspaces will be available for selection in the Switch Workspace menu.

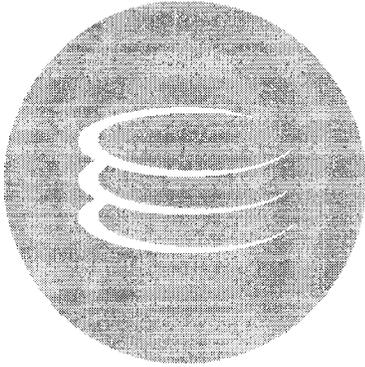
The Switch Workspace --> Other menu item will open the switch workspace dialog. The dialog will allow you to browse for or manually enter a new workspace location. The combo will also allow you to select your previously selected workspaces.

## Settings Transfers

When you switch your workspace you can select settings than will be transferred to the new workspace. These settings are supplied by the org.eclipse.ui.preferenceTransfer extension.

The SDK supplies transfers for:

- Workspace Layout: Opened views, their size, and selected perspectives.
- Working Sets: The user defined working sets.



# ER/Studio® 7.6 User Guide

EXHIBIT  
8  
Title, v2 2-9-11

**Growth Analysis Tab**

Select items to include in a capacity planning report. Use the **Report...** button to set the file location and format.

Option	Description	
Analysis Options	Report Type	Select the database item for the report.
	Report Options	Select any or all of the options.
Output	Displays the items that will appear in the report according to Report Type above.	

**See Also**

[Capacity Planning: Space Calculation Formulas](#)

[Capacity Planning](#)

**Growth Parameters Tab**

Parameters for Formulas:

**Row Overhead:** Tailors the formulae to account for any overhead used by specific DBMS platforms to store each record. This number represents the number of bytes of possible overhead a DBMS uses to store records. This should be set to 0 initially, but you can specify any number of bytes to add on to the row size.

**Table Overhead:** Accounts for overhead to store data for a table. This is a multiplier applied to table size. A value of 1.2 corresponds to 20% overhead. The default value is 1, meaning no overhead.

**Index Overhead:** Accounts for overhead to store indexes. The number of bytes is added to the indexed column sizes. For example, in Oracle the index overhead is 6 bytes, so 6 is added to the sum of the indexed column sizes. default is 0 initially.

**BLOB Overhead:** Accounts for overhead to store BLOB columns. Similar to **Table Overhead**, this is a multiplier applied to BLOB storage. A value of 1.2 corresponds to 20% overhead. The default value is 1, meaning no overhead.,

**BLOB BlockSize:** Set an estimate of the average size of BLOB columns. This will be used as the average size of each BLOB column.

**See Also**

[Capacity Planning: Space Calculation Formulas](#)

[Capacity Planning](#)

**Capacity Planning: Space Calculation Formulas**

Details and notes about Capacity Planning calculations are given below.

**Datatypes and Sizing**

**Column Size** depends on the datatype of the column. ANSI standards are used across all platforms. Examples below are for some common data types. The Row Overhead can be used to customize the formula.

**CHAR** or **VARCHAR** columns – the maximum number of characters specified, e.g. average width or allocated with. For fixed-length columns, allocated width will be used in the calculations. For variable width, average width will be used if non-zero.

**NCHAR** or **NVARCHAR** or other Unicode datatypes the storage number is doubled compared to CHAR/VARCHAR.

**DATE** – 7 bytes

**BLOB, CLOB, TEXT** other large objects the **BLOB Block Size** is used in the calculations.

**NUMBER(p,s)** columns use the formula:  $\text{Floor}((p + 1) / 2) + 1$ .

**VRowSize** computes the row size for the variable length columns of the table:

$$\text{VRowSize} = (\text{Sum of } (1 - \text{Column Percent NULL}) * (\text{ColumnSize for each variable length null columns})) + (\text{Sum of ColumnSizes for Variable length NOT Null columns})$$

**FLRowSize** computes the row size for the fixed length columns of the table:

$$\text{FLRowSize} = (\text{Sum of } (1 - \text{Column Percent NULL}) * (\text{ColumnSize for each fixed length null columns})) + (\text{Sum of ColumnSizes for fixed length NOT null columns})$$

$$\text{AvgRowSize} = \text{VRowSize} + \text{FLRowSize} + \text{RowOverhead}$$

$$\text{BlobSize} = (\text{Sum of BLOBBlockSizes for LOB columns in table}) * \text{BLOBOverhead}$$

$$\text{TableSize (in bytes)} = (\text{AvgRowSize} + \text{BlobSize}) * \text{nRows} * \text{TableOverhead}$$

$$\text{IndexSize (in bytes)} = ((\text{Sum of ColumnSizes for indexed columns}) + \text{IndexOverhead}) * \text{nRows}$$

#### **Growth Analysis Report**

Select the report options and format you'd like. The options you selected previously in the **Capacity Planning: Growth Analysis and Parameters** tabs may have a dramatic effect on the figures of your report.

#### **See Also**

[Capacity Planning: Space Calculation Formulas](#)

[Table Editor - Capacity Planning Tab](#)

[Capacity Planning Options Dialog](#)

[Capacity Planning Data Growth Analysis Report Dialog](#)

Object	Description
<a href="#">Data Security</a>	Enforces Enterprise Data Security standards and custom levels
<a href="#">Rules</a>	Lets you create and manage rules.
<a href="#">Reference Values</a>	Lets you create and manage reference values.
<a href="#">User Datatypes</a>	Lets you create and manage user datatypes.
<a href="#">Domains</a>	Lets you create, organize, and manage domains and domain folders.
<a href="#">Reusable Procedural Logic</a>	Lets you create and manage reusable triggers, reusable procedures, and libraries.

**Related Topics**

[View Bindings Dialog Box](#)

[Importing a Data Dictionary](#)

[Working with the Data Dictionary Tab](#)

**See Also**

[Working with Data Models](#)

**Working with the Data Dictionary Tab**

ER/Studio organizes all the reusable dictionary objects in object-specific nodes on the Diagram Explorer [Options Editor - Data Dictionary Tab](#). Each node includes [Shortcut Menus](#), to manage all your objects. As you drill into each Data Dictionary Object node, you get more granular level shortcut menus.

The table below provides a general overview of the data dictionary shortcut menus. These menu items are available when you right-click any of the Data Dictionary Object nodes or sub nodes. For more detailed information on working with specific data dictionary objects, see Related Topics below.

Shortcut Menu	Description
New Object	This menu item is available when you right-click either the root Data Dictionary object node, or any object with in the node.  <b>NOTE:</b> You may have sub nodes with Domains. It opens an object specific dialog box where you can fill in all the information for the new object.
Edit Object	This menu item is only available when you right-click within a Data Dictionary object node. It opens the dialog box specific to the target item.
Delete Object	This menu item is only available when you right-click within a Data Dictionary object node. To delete an object, right-click it.
Copy Dictionary Object	This menu item is only available when you right-click within a Data Dictionary object node. You can copy any standard Data Dictionary object to the clipboard and then paste it in the target location: either within the current diagram, or in another diagram. When you copy a Data Dictionary object, ER/Studio copies all of its dependent objects too.
Paste Dictionary Object	This menu item is available when you right-click either the root Data Dictionary object node, or any object within the node. You can paste any standard Data Dictionary object from the clipboard to a target location: either within the current diagram, or in another diagram. When you paste a Data Dictionary object, ER/Studio pastes all of its dependent objects too.

Option	Description
Available Attachments Grid	Lets you bind an attachment to an object, remove an attachment from an object, override an attachment binding's default value, or change a bound attachment's position.  Use right arrow to move an available attachment to the <b>Selected Attachments</b> grid.  Use the left arrow key to remove the attachment from the <b>Selected Attachments</b> grid to the <b>Available Attachments</b> grid.  Use the up or down arrows to change the position of the attachment.  To override the value of the attachment once you have moved it to the <b>Selected Attachments</b> grid, double-click the <b>Value</b> field of the target attachment. ER/Studio opens the <a href="#">Value Override Editor</a> or opens a list depending on the attachment datatype.
	Available Attachments Displays all attachments available for binding. Available Attachments need to be created in the <a href="#">Attachments</a> folder of the <a href="#">Data Dictionary</a> .
	Selected Attachments Displays the attachments bound to the object.

**See Also**

[Defaults](#)

[Add/Edit Default Definition Editor](#)

**Add/Edit Default Definition Editor - Binding Information**

The table below describes the options and functionality on the **Binding Information** tab of the **Add/Edit Default Definition Editor**:

Option	Description
Object Class List	Displays all available objects in the Data Dictionary. From this list, select the object you want to view its bound objects.
Object List	Displays all the individual objects bound to the object selected in the Object Class list. ER/Studio displays the objects in a tree structure which shows the object's parent object. For example, if you select the Attribute class, the attributes are organized in the Object List according to which entity they each belong. You can bind the attachment to individual objects or all the objects in the list, and override the default value for individual bindings.  To override a bound attachment's default value, double-click the object. ER/Studio opens the <b>Value Override Editor</b> , where you can enter a new value.  <b>NOTE:</b> If the bound datatype uses the Text List datatype, double-click the object to open the Value Override list and then select a value from the list.  <b>Tip:</b> If you do not want to use all the objects on the list, use the <b>Deselect All</b> button to clear the check boxes and then select the check box for the target objects.
Show only currently bound objects	If selected, ER/Studio displays only bound objects instead of available objects in the Object List pane.

**See Also**

[Defaults](#)

[Add/Edit Default Definition Editor](#)

**Edit User-Defined Datatype Editor - Binding Information Tab**

The table below describes the options and functionality on the Bindings Information tab of the Edit User-Defined Datatype dialog box:

Option	Description
Object Class List	Displays all available objects in the Data Dictionary. From this list, select the object you want to view its bound objects.
Object List	Displays all the individual objects bound to the object selected in the Object Class list. ER/Studio displays the objects in a tree structure which shows the object's parent object. For example, if you select the Attribute class, the attributes are organized in the Object List according to which entity they each belong. You can bind the attachment to individual objects or all the objects in the list, and override the default value for individual bindings. To override a bound attachment's default value, double-click the object. ER/Studio opens the <b>Value Override Editor</b> , where you can enter a new value. <b>NOTE:</b> If the bound datatype uses the Text List datatype, double-click the object to open the <b>Value Override</b> list and then select a value from the list. <b>Tip:</b> If you do not want to use all the objects on the list, use the <b>Deselect All</b> button to clear the check boxes and then select the check box for the target objects.
Show only currently bound objects	If selected, ER/Studio displays only bound objects instead of available objects in the Object List pane.

**See Also**

[Edit User-Defined Datatype Editor](#)

**Domains**

Domains are reusable attribute templates that promote consistent domain definitions. You construct domains as you would attributes, specifying a name, datatype properties, null status, default values and validation rules. After creating domains, you can re-use them in your data model by applying them to attributes and table columns. By defining a domain, you also gain the power of propagating changes to the underlying domain definition to all attributes and table columns that reference it.

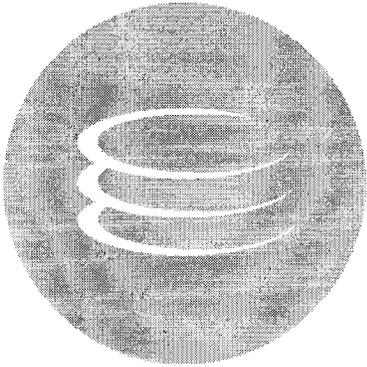
One important method for enforcing business rules is to define and to apply domain restrictions. Domain integrity refers to the rules governing what values an attribute can take. By restricting and validating an attribute's values, you can implement important business rules such as ensuring that a checking account maintains a positive balance, or preventing the entry of invalid phone numbers.

ER/Studio lets you organize your domains using domain folders. Domain folders let you create and manage your Data Dictionary Domains. You can classify domains in unique groups by creating different domain folders. You can create nodes within nodes. You can move existing domains into a domain folder, or create new domains within the folder.

Domains can be dragged and dropped into a table or entity to create a column or attribute. Domains can have nested subdomains.

A **Domain Override** option in the **Add Domain** or **Edit Domain** functions creates inheritance and overrides the domain system without losing the valuable relationship with the attributes/columns (binding information).

**NOTE:** When you delete a domain folder, all domains and folders within that folder are also deleted. All bindings to any columns and attributes are unbound.



# **ER/Studio® 8.0 User Guide**

# Welcome to ER/Studio

ER/Studio is a visual modeling application used for platform-independent logical data architecture analysis and design, in addition to platform-specific physical database design and construction. Its powerful, multi-level design environment addresses the everyday needs of database administrators, developers, and data architects who build and maintain large, complex database applications and strive to consolidate, report, and re-use metadata across the enterprise.

ER/Studio's progressive interface and simplicity has been designed to effectively address the ease-of-use issues which have plagued data modeling and CASE tools for the past decade and more. The application equips you to create, understand, and manage the life-cycle of mission-critical database designs and business metadata within the enterprise.

ER/Studio is rich and customizable. ER/Studio offers:

- Strong logical design capabilities
- The ability to spawn many physical designs from a corporate logical design
- Bi-directional model comparison and information synchronization
- Visual-Basic for Applications API for product customization
- Powerful DDL reverse engineering and generation
- Metadata import and export capabilities
- Data lineage documentation
- Sophisticated XML, HTML, and RTF-based documentation and reporting facilities.

## About This Document

The *ER/Studio User Guide* is the primary reference for ER/Studio. It provides an overview of the product and gives detailed instructions on common and less-common tasks. In HTML Help format it serves as the online help for ER/Studio. It is also distributed in PDF format for easy downloading and printing.

For licensing and installation information, see the *ER/Studio Installation Guide*.

For pointers to additional information not included in this document, see [Additional Product Resources](#)

## Product Benefits by Audience

- **Data Modelers and Data Architects:** ER/Studio is critical for organizations concerned with eliminating data redundancy, creating an enterprise view of data assets, and assisting development with making informed decisions about how best to reuse elements pre-defined by the enterprise. Its powerful logical (non-database or technology specific) analysis and design environment helps to normalize and create an enterprise view of the objects concerning the data managed by an organization. More importantly, it can communicate this quickly through powerful reporting and metadata exchange mechanisms throughout the enterprise.

## Status Bar

ER/Studio provides statistics pertaining to your logical and physical model in the status bar at the bottom of the application. The table below describes the statistics available on the Status bar:

Diagram Mode	Statistic	Definition
Logical	Views	Total number of views in the current model or submodel
	Entities	Total number of entities in the current model or submodel
	Attributes	Total number of attributes in the current model or submodel
	Relationships	Total number of relationships established in the current model or submodel
Physical	Tables	Total number of tables in the current model or submodel
	Views	Total number of views in the current model or submodel
	Columns	Total number of columns in the current model or submodel
	Foreign Keys	Total number of foreign keys in the current model or submodel

## Configuring and Customizing ER/Studio

There are many options available to customize how ER/Studio behaves and what it displays in the Diagram Windows. Some options, such as the Diagram and Object Display Options and Model Options are saved in the .dm1 file and affect how the model displays or behaves immediately, while the Tools Options and Cursor Popup Help Options affect how the application and any new models created will display or behave.

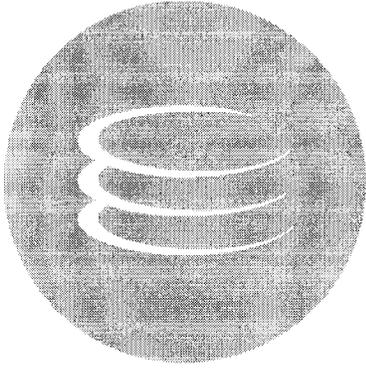
- [Changing Diagram and Object Display Options](#)
- [Defining Model Options for the Selected Model](#)
- [Specifying the Location of Shared Data](#)
- [Changing Cursor Popup Help Options](#)

### Changing Diagram and Object Display Options

Diagram and Object Display options affect how the diagram objects appear only for the selected model or submodel. You can choose different display options for each physical and logical model and submodel. The diagram and object display options you choose are stored in the .dm1 file along with your diagram and apply only to the current diagram. Regular display options for the diagram include setting page boundaries and snapping to grid. Object-specific display options include specifying the information displayed about each object on the diagram. You can specify the content displayed for entities and views. You can also customize display settings for relationships and schema objects.

You can change the entity/table display level to show attributes/columns, primary keys, all keys, tables, definitions, or notes. You can further set display options for certain objects to display object datatype, domain, null options, alternate keys, and owner.

With views, you can change the display level to show columns, primary keys, all keys, view, definition, and note. You can further set display options for certain objects to display object owner and parent name.



# **ER/Studio User Guide**

### Shortcuts

Shortcuts let you access important functionality through key combinations. The table below describes the shortcuts:

Shortcut	Function
CTRL+A	Selects all entities in the Diagram window.
CTRL+SHIFT+A	Select all entities and relationships in the Diagram window.
CTRL+E	Centers the docking point for a relationship line on the parent entity.
CTRL+H	Straightens the selected relationship lines horizontally. The line(s) will straighten based on the docking point against the parent entity.
CTRL+L	Straightens the selected relationship lines vertically. The line(s) will straighten based on the docking point against the parent entity.

For more information, see [Product Design](#).

### Status Bar

ER/Studio provides statistics pertaining to your logical and physical model in the status bar at the bottom of the application. The table below describes the statistics available on the Status bar:

Diagram Mode	Statistic	Definition
Logical	Views	Total number of views in the current model or submodel
	Entities	Total number of entities in the current model or submodel
	Attributes	Total number of attributes in the current model or submodel
	Relationships	Total number of relationships established in the current model or submodel
Physical	Tables	Total number of tables in the current model or submodel 1
	Views	Total number of views in the current model or submodel 1
	Columns	Total number of columns in the current model or submodel 1
	Foreign Keys	Total number of foreign keys in the current model or submodel

For more information, see [Product Design](#).

### Customizing

You can change the menu and toolbar to match Microsoft OS styles or the OneNote MDI look during installation, or at any time later by right-clicking anywhere in the toolbar area of the main window and choosing [Customize](#). The OneNote style allows you to drag window tabs and rearrange them.

Term	Definition
Sub-Graph	A group of interconnected entities and views on the model. ER/Studio determines the clusters and attempts to organize each internally as well as the positions of separate clusters to each other.
Cluster	A group of related entities.
Edge	The relationship connecting two entities.

For more information, see

[Changing Diagram Auto Layout](#)

[Layout Properties Editor](#)

### Circular Layout

The Circular Layout lets you produce data model diagrams that emphasize group structures. If selected, ER/Studio rearranges your diagram into one or more circular patterns. This layout separates entities into clusters based on a number of flexible grouping methods. Each cluster is grouped into circles according to the logical interconnection of these clusters.

The Circular Layout places all entities in a circle in a manner that attempts to minimize the number of lines that must cross the middle. This is not possible if every entity is connected to every other entity. In most data models, most entities connect only to their close neighbors, leaving the middle of the circle largely empty.

Circular Layouts reveal the dependencies between Data Model objects. Additionally, no object or relationship can hide completely in a circular graph, thereby exposing all of the objects and their relationships.

You can make changes to the Circular Layout using the Circular tab of the Layout Properties Editor. The Circular tab provides options that let you specify clustering, spacing, and alignment.

For more information, see

[Diagram Auto Layout](#)

[Changing Diagram Auto Layout](#)

### Hierarchical Layout

The Hierarchical Layout lets you produce data model diagrams that organize entities in a graph based on the direction of relationship orientation. If selected, ER/Studio rearranges your diagram into a hierarchy pattern, with most symbols falling below a lead symbol. Hierarchical diagrams allow the existence of cycles, where a path starts and ends on the same entity.

With the Hierarchical Layout you can create graphs that feature Incremental Layouts, Orthogonal routing, and Port specifications. Incremental Layouts let you create relatively stable graphs during repeated Layout processes. This feature helps maintain your diagram according to the original style of the target diagram without disturbing styles previously applied to pre-existing diagram objects despite successive drawings.

Orthogonal routing lets you create hierarchical diagrams where relationships run horizontally and vertically along a grid.

You can make changes to the Hierarchical Layout using the Hierarchical tab of the Layout Properties Editor. The Hierarchical tab provides options that let you specify orientation, spacing, level alignment, incremental layout and relationship routing.

For more information, see

[Diagram Auto Layout](#)

Layout Properties Editor**Relationship Line Diagramming Properties**

ER/Studio lets you customize relationship lines in your diagrams. Relationship lines are graphical representations of relationships between entities and/or attributes. You can customize the appearance of any relationship line in any diagram, even if you are using one of ER/Studio's preset automatic layouts. For instance, if you use an Orthogonal layout, where all relationships bend at only 90 degrees angles, you can change any individual bend to an N bend, or straight relationship line.

You can also set the bend attributes of any relationship in a diagram. There are two kinds of bends in ER/Studio: N bends or Orthogonal bends. N Bends are relationship lines that bend at any angle while Orthogonal bends only bend at 90 degree angles. Both the Hierarchical and Orthogonal diagram auto layouts use only Orthogonal relationship lines. All other automatic layouts use straight relationship lines. ER/Studio lets you create straight relationship lines. You can set straight relationship lines to be exactly vertical or horizontal.

When you use the diagram automatic layouts, ER/Studio organizes your data models according to the specifications of that particular layout. Each layout has different specifications for the way relationships bend and how relationships dock or intersect to entities and attributes. You can move the docking positions on parent or child entities.

You can change the color of all or individual relationships in your diagram. ER/Studio lets you specify a default relationship color on the Application tab of the Options Editor. Even if you set a default color for your relationships, you can still use the Colors and Fonts Editor to change all or individual relationships in your diagram.

**NOTE:** You can overwrite relationship defaults after applying an automatic layout by changing relationship lines in a diagram or by changing line disposition in a diagram.

**TIP:** You can use the Options Editor, Diagram and Object Display Options Editor, and the Format Menu to change relationship disposition and colors. Use the Options Editor - Application tab if you want to make global changes to all your data models. Use the View Menu to make changes to the current data model. Use the Format Menu to make changes to the selected object(s). Changes are cascading meaning that changes made in the Format Menu will override changes made in the Options Editor.

For more information, see

Move and Reposition Lines

Option	Description
Percent Increase	Lets you enter a percent increase value. Percent Increase specifies the percentage by which the next extent should grow over the previous extent's size. You should be careful when setting Percent Increase because it magnifies how an object grows and, therefore, can materially affect available free space in a tablespace.
Min Extents	Lets you enter a minimum extent. Minimum Extents control free space fragmentation by making sure that every used or free extent is at least as large as the value you specify.
Max Extents	Lets you enter a maximum extent value. Maximum Extents specifies the maximum number of extents that Oracle can allocate to the materialized view. Once this limit is reached, Oracle prevents further growth of the cluster and cannot accept additional data. As a result, you should carefully monitor the number extents already allocated to the materialized view against this limit.

For more information, see

[Table Editor](#)

### Table Editor - Storage Tab for Oracle 8 & 9

The table below describes the options and functionality on the Storage tab for Oracle 8 & 9 of the Table Editor:

Option	Description
Organization	Lets you select to organize your table by heap or index.  Index-organized tables are tables with data rows grouped according to the primary key.  Heap-organized tables have physical rowids. Oracle Corporation does not recommend that you specify a column of datatype UROWID for a heap-organized table.
Pct Free	Lets you enter a percent free value. Percent Free specifies the percentage of space in each data block to reserve for future updates. This reserved space helps to avoid row migration and chaining caused by an update operation that extends a data row's length.
Pct Used	Lets you enter a percent used value. Percent Used specifies the minimum percentage of space that must be used in each data block. When the space used in a data block falls below this threshold, it becomes a candidate for row insertion.
Initial Trans	Lets you enter an initial transaction. Initial Transactions limit the minimum number of concurrent transactions that can update a data block to avoid the overhead of allocating a transaction entry dynamically.
Max Trans	Lets you enter a max transaction. Max Transactions limit the number of concurrent transactions that can update a data block to avoid performance problems.
Initial Extent	Lets you enter an initial extent value. Initial Extent specifies a table's initial number of data blocks. Oracle will reserve the data blocks that correspond to the initial extent for that table's rows.
Next Extent	Lets you enter a next extent value. Next Extent specifies the size in kilobytes of the next extent. You should monitor this figure against the largest available chunk of free space in the tablespace. If a table cannot allocate its next extent, it will no longer be able to extend and, therefore, cannot accept additional data.



Product Documentation

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# **ER/Studio® Data Architect**

User Guide

Version 8.5

Published October 7, 2009

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Macros which run inside ER/Studio DA's SAX BASIC shell will use the pre-initialized 'DiagramManager' object. There are numerous examples of this in ER/Studio DA's Macro tab and in the Code Samples section of help.

**Good Programming Practice:** Use the `DiagramManager.GetLastErrorCode()` or `DiagramManager.GetLastErrorString()` to check for errors after method calls.

**To summarize:** Outside ER/Studio DA you begin with an instance of `ERStudio.Application`. Inside you begin with `DiagramManager`, and an instance is already running.

## Accessing Collections of Objects

Collections are groups of Objects of the same type. For example, the `Models` object is a collection of all the `Models` in a `Diagram`.

Each Collection has four methods:

- `Item()`, this is the default method
- `Add()`
- `Remove()`
- `Count()`

You can access objects by name (and sequence number or technical key, when appropriate). The following code sample illustrates default behavior:

```
Dim myentity as Entity
Set myentity = mymodel.Entities("Entity1")
```

In this example, the `Item()` method in the `Entities` collection is actually called to return the `Entity1` object, but the script does not need to contain an explicit reference to the method because it is the default method.

The `Add()`, `Remove()`, and `Count()` methods are supported for all collections, except where noted. These methods modify the internal data in ER/Studio DA immediately. The `Add()` method adds a new object into the collection. `Add()` fails if the object is not properly initialized. The `Count()` returns the number of objects in the collection.

## Iterating Through Collections

The most-often used way of retrieving each object in a collection is with the `For Each ... Next` loop. Note the use of the variable `HowMany` to start and iterate the loop below.

```
' Sets the entity name for each entity in the given collection
Dim MyDiagram As Diagram
Dim MyModel As Model
Dim MyEntity As Entity
Dim EntName As String
Dim HowMany As Integer

Set MyDiagram = DiagramManager.ActiveDiagram
Set MyModel = MyDiagram.ActiveModel

HowMany = 1

' Iterates through the Entities collection to rename all entities
For Each MyEntity In MyModel.Entities
  ' Uses CStr function to convert the Count variable to a string
  EntName = "ShinyNewEntity" + CStr (HowMany)
  MyEntity.EntityName = EntName
  HowMany = HowMany + 1
Next MyEntity
```

- **Checking In/Out Diagrams versus Checking In/Out Objects:** You can use information in the `RepoSrvDb.Log` to optimize performance and to make recommendations on how users can use the Repository more effectively. For example, checking in or checking out an entire diagram is less efficient than selecting multiple objects for check in or check out. The `RepoSrvDb.Log` file is found on the Repository application server. It provides a record of who is using the Repository and when, the request type initiated, the processing result, and the total time to process the request. Total Process Seconds is listed for each request and includes the time required to parse the request file, insert and/or retrieve data from the database, and build and write out a results file.
- **For Oracle environments:**
  - **Separate Tablespaces:** Create separate tablespaces for Repository tables, `ERSTUDIO_DAT` and indexes, `ERSTUDIO_IDX`. The extent of each of these tablespaces should be 1 MB or larger. In some very large Repository environment it may be beneficial to further separate the larger tables and their indexes creating, for example `ERSTUDIO_DAT2` and `ERSTUDIO_IDX2` in addition to the original tablespaces.
  - **Rebuild Indexes:** The Repository index, `ERSTUDIO_IDX` should be rebuilt at least once a month. Depending on how many diagrams are added, the index may need to be rebuilt on a weekly basis.
  - **Analyze and Compute Statistics:** The response of queries to the Repository can be improved by running `DBMS_STATS` for recent Oracle version or the Analyze Table and Compute Statistics statements for older versions. These commands gather information about data distribution within the tables and indexes and update the data dictionary with this information. This enables the cost-based query optimizer to make more intelligent decisions about how to efficiently process SQL statements that access the tables or indexes.
  - **Oracle Logs:** Check In operations can cause checkpointing to occur which can interrupt other Repository actions to the detriment of response time. To minimize the effect checkpoint has, increase the size of the logs, set the `log_checkpoint_interval` parameter in `init.ora` to zero, and reduce the size of the log buffer.

## \Contingency Planning

To ensure optimal Repository performance and availability, backup the Repository schema frequently and designate another server as the backup server in case of hardware failure. Then, if necessary, you can install a new set of Repository services onto the backup server and point the Repository to a freshly restored backup.

## Running Reports on the Repository

The Utilities folder in the Repository directory contains many SQL scripts. The SQL Agent is used to run these.

## Backing Up and Recovering the Repository

You should implement a backup and recovery process for your Repository Database. Repository stores critical data in the Repository Server Data folder.

When you add your locally created and managed \*.DM1 files to the Repository server, the file is managed in the Repository Database (existing within Oracle, Sybase, SQL Server or DB2 tables). You can find these files in the ER/Studio Repository installation path. If you accepted the installation default, the files are located in:

- ... \Embarcadero\ERStudioX.X\Repository\Data

**NOTE:** ER/Studio DA no longer uses overflow files. Long files are now added to the Repository Database.

The Repository Server is the only interface to the Repository database. It is responsible for managing the state of the Repository data. The Repository Server is basically a transaction server for the database. The Repository database also stores the transaction history as well as all security rules and data. Because the Repository server is responsible for data transactions with the database there can only be one Repository server for each Repository database.

## GLOSSARY

### S

**Scale:** The scale of a numeric column or attribute refers to the maximum number of digits to the right of the decimal point.

**Schema:** The definition or structure of data or database objects.

**Schema Definition (XSD):** The XSD specifies how to formally describe the elements in an XML document. It is an abstract representation of an object's characteristics and how the object relates to other objects. The XSD is used to verify that each element in an XML document conforms to the element rules described in the XSD.

**Sequence:** A programmable database object that generates a definable sequence of values. Once defined, a sequence can be made available to many users.

**Set Null:** A process wherein the existence of foreign key values in the parent entity's primary key is verified; if the values cannot be verified, the trigger sets the foreign key values to null in the child entity in order to allow data modification operations to proceed.

**Status Bar:** ER/Studio DA provides statistics pertaining to your logical and physical model in the status bar at the bottom of the application. The table below describes the statistics available on the Status bar:

Data Model Mode	Statistic	Definition
Logical	Views	Total number of views in the current model or submodel
	Entities	Total number of entities in the current model or submodel
	Attributes	Total number of attributes in the current model or submodel
	Relationships	Total number of relationships established in the current model or submodel
Physical	Tables	Total number of tables in the current model or submodel
	Views	Total number of views in the current model or submodel
	Columns	Total number of columns in the current model or submodel
	Foreign Keys	Total number of foreign keys in the current model or submodel

**Stogroup:** A set of volumes on direct access storage devices (DASD). The volumes hold the data sets in which tables and indexes are actually stored.

**Sub-Graph:** A group of interconnected entities and views on the model. ER/Studio DA determines the cluster components and attempts to organize each internally as well as the positions of separate clusters in relation to each other.

**Submodel:** An independent view of all or part of a logical or physical model.

**Subtype:** A subset of entity instances that share common attributes or relationships distinct from other subsets.

**Subtype Cluster:** A hierarchical grouping of entities that share common characteristics, but which can be divided into separate entities with distinct entity instances. Also known as a category entity.

**Supertype:** The parent entity in a subtype cluster that represents the superset of the subtypes.

**Surrogate Key:** An attribute or set of attributes that is generated strictly to serve as an entity's primary key. The data in a surrogate key has no inherent meaning or purpose except to uniquely identify every instance of the entity.



Product Documentation

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# ER/Studio® Data Architect

User Guide

Version 8.5.3  
Published February 2010

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**CORPORATE HEADQUARTERS**  
100 CALIFORNIA STREET  
12TH FLOOR  
SAN FRANCISCO, CALIFORNIA  
94111 USA

**EMEA HEADQUARTERS**  
YORK HOUSE  
18 YORK ROAD  
MAIDENHEAD, BERKSHIRE  
SL6 1SF, UNITED KINGDOM

**ASIA-PACIFIC HEADQUARTERS**  
L7, 313 LA TROBE STREET  
MELBOURNE VIC 3000  
AUSTRALIA

## STATUS BAR

ER/Studio DA provides statistics pertaining to your logical and physical model in the status bar at the bottom of the application. The table below describes the statistics available on the Status bar:

Diagram Mode	Statistic	Definition
Logical	Views	Total number of views in the current model or submodel
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Physical	Tables	Total number of tables in the current model or submodel
	Views	Total number of views in the current model or submodel
	Columns	Total number of columns in the current model or submodel
	Foreign Keys	Total number of foreign keys in the current model or submodel

## CONFIGURING AND CUSTOMIZING ER/STUDIO DA

There are many options available to customize how ER/Studio DA behaves and what it displays in the Data Model Windows. Some options, such as the Diagram and Object Display Options and Model Options are saved in the .dm1 file and affect how the model in that file displays or behaves immediately, while the Tools Options and Cursor Popup Help Options affect how the application and any new models created will display or behave.

- [Customizing the Display of Diagrams and Objects](#)
- [Defining Model Options for the Selected Model](#)
- [Specifying the Location of Shared Data](#)
- [Changing Cursor Popup Help Options](#)

### CUSTOMIZING THE DISPLAY OF DIAGRAMS AND OBJECTS

Diagram and Object Display options affect how the diagram objects appear only for the selected model or submodel. You can choose different display options for each physical and logical model and submodel. By accessing the Diagram and Object Display Options from the Data Lineage Tab, you can also customize the appearance of transformation objects. The diagram and object display options you choose are stored in the .dm1 file along with your diagram and apply only to the current diagram. Diagram display options include setting page boundaries and snapping to grid. Object-specific display options include specifying the information displayed about each object on the diagram. You can specify the content displayed for entities and views. You can also customize display settings for relationships and schema objects.

- **Cardinality:** Displays the cardinality of the relationships between entities or tables.
- **Verb Phrases:** Displays defined verb phrases next to the relationship lines in the diagram.
- **Rolename Notation:** Displays full IDEF1X rolename notation.
- **Display Mode:** Lets you select a display mode and then select Display Options. The options are:
  - **Attribute (Model Order):** Displays the entities and all their attributes in the default order according to the model type. For example, in the logical model, the attributes appear as they normally would in a logical model, primary keys first.
  - **Attribute (Logical Order):** Displays the entities and all their attributes in Logical Order, regardless of whether you are viewing the logical or physical model. When the attributes are in Logical Order, ER/Studio DA sequences the attributes so that the primary keys are always on top.
  - **Attribute (Physical Order):** Displays the entities and all their attributes in Physical Order, regardless of whether you are viewing the logical or physical model. When the attributes are in Physical Order, ER/Studio DA sequences the attributes to reflect their order in the physical model, without regard to whether the primary keys are on top or not.
- **Image Export Settings:** Sets image file options for HTML Reports, such as JPG, BMP and WMF. If not selected, the diagram is rendered in black and white.

#### Directories tab

Defines the directories in which to store models, database scripts, reports, reference models, and macros.

#### Tools tab

- **ISQL Path:** Lets you type the file name and location of the SQL tool which will launch to manage the SQL ER/Studio DA outputs. You can replace the default `uisql.exe` editor with any ISQL editor. For example, you can use DBArtisan or SQL Server Enterprise Manager's Query Analyzer. The default path for DBArtisan is  
`C:\Program Files\Embarcadero\DBAXXX\DBArtXXX.exe`
- **Startup Directory:** Lets you enter a file name and location of the default save directory for the SQL application.

#### Diagram tab

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**NOTE:** Options selected here apply immediately to the open data model.

---

- **Entity:** Select the entity information to display when you hover over an entity.
- **Schema Object Display:** Select the schema object information to display when you hover over a schema object.
- **Loiter Time:** The amount of time in seconds the popup displays when you hover over an object in the Data Model Window.

- Oracle 8.x, 9i, 9i, 10g, and 11g

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**NOTE:** The **Sequence Wizard** and **Sequence Editor** share the same options, except for **Attachment Bindings** options which are present only in the editor.

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### Create or edit a Sequence

- 1 In the **Data Model Explorer**, expand the **Physical Main Model**, right-click the **Sequences** node, and then select **New Sequence**.
- 2 Complete the **Sequences Wizard** and then click **Finish** to create the sequence.

**TIP:** Once you have created the sequence, you can edit it by right-clicking the sequence you want to change, and then clicking **Edit Sequence**.

The following describe options that require additional explanation.

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**NOTE:** The options available depend on the database platform selected.

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#### Name page/tab

- If you have already defined users for the selected database, you can click the list and choose a defined user for the sequence owner.

#### Options page/tab

- **Cycling:** If you have specified a *Maximum Value* on the previous page/tab, you can choose to cycle the values.
- **Ordering:** Specify whether or not the sequence numbers must be generated in order of request.
- **Cache:** Consider the following performance and application requirements trade-offs when choosing to enable the cache and the optimal cache size:
  - Caching sequence numbers enables a range of sequence numbers to be kept in memory for fast access. If the next sequence number can be allocated from cache, number allocation can happen quickly; however, if the next sequence number cannot be allocated from cache, the application may have to wait for I/O operations to complete.
  - Not caching sequence values ensures that there is no loss of values in the event of a system failure, shutdown or database deactivation. The values of the sequence are not stored in the cache and every sequence request results in synchronous I/O to the log.

#### Definition page/tab

Enter or edit a definition for the sequence. If the target database supports it, ER/Studio DA adds this definition as a comment when generating SQL code.

- **For Oracle environments:**
  - **Separate Tablespaces:** Create separate tablespaces for Repository tables, `ERSTUDIO_DAT` and indexes, `ERSTUDIO_IDX`. The extent of each of these tablespaces should be 1 MB or larger. In some very large Repository environment it may be beneficial to further separate the larger tables and their indexes creating, for example `ERSTUDIO_DAT2` and `ERSTUDIO_IDX2` in addition to the original tablespaces.
  - **Rebuild Indexes:** The Repository index, `ERSTUDIO_IDX` should be rebuilt at least once a month. Depending on how many diagrams are added, the index may need to be rebuilt on a weekly basis.
  - **Analyze and Compute Statistics:** The response of queries to the Repository can be improved by running `DBMS_STATS` for recent Oracle version or the Analyze Table and Compute Statistics statements for older versions. These commands gather information about data distribution within the tables and indexes and update the data dictionary with this information. This enables the cost-based query optimizer to make more intelligent decisions about how to efficiently process SQL statements that access the tables or indexes.
  - **Oracle Logs:** Check In operations can cause checkpointing to occur which can interrupt other Repository actions to the detriment of response time. To minimize the effect checkpoint has, increase the size of the logs, set the `log_checkpoint_interval` parameter in `init.ora` to zero, and reduce the size of the log buffer.

## CONTINGENCY PLANNING

To ensure optimal Repository performance and availability, backup the Repository schema frequently and designate another server as the backup server in case of hardware failure. Then, if necessary, you can install a new set of Repository services onto the backup server and point the Repository to a freshly restored backup.

## RUNNING REPORTS ON THE REPOSITORY

The Utilities folder in the Repository directory contains many SQL scripts. The SQL Agent is used to run these.

## BACKING UP AND RECOVERING THE REPOSITORY

You should implement a backup and recovery process for your Repository Database. Repository stores critical data in the Repository Server Data folder.

When you add your locally created and managed \*.DM1 files to the Repository server, the file is managed in the Repository Database (existing within Oracle, Sybase, SQL Server or DB2 tables). You can find these files in the ER/Studio Repository installation path. If you accepted the installation default, the files are located in:

**Repository:** A central database that stores information about the elements and structure of a data model.

**Restrict:** A process to ensure that the deletion or update of a parent entity instance will not occur unless there are no child entity instances depending on it.

**Reverse-Engineering:** The process of extracting the definition of database objects, usually from a database's system catalog.

**Role Name:** An alternate name for a foreign key attribute. Role names are used for clarification and should better describe the role of an attribute within the context of a particular entity.

**Rollback Segment:** Records and manages changes in an Oracle database to maintain read consistency and transaction integrity.

**Rule:** A database object that enforces a business rule by requiring data to fulfill a condition.

## S

**Scale:** The scale of a numeric column or attribute refers to the maximum number of digits to the right of the decimal point.

**Schema:** The definition or structure of data or database objects.

**Schema Definition (XSD):** The XSD specifies how to formally describe the elements in an XML document. It is an abstract representation of an object's characteristics and how the object relates to other objects. The XSD is used to verify that each element in an XML document conforms to the element rules described in the XSD.

**Sequence:** A programmable database object that generates a definable sequence of values. Once defined, a sequence can be made available to many users.

**Set Null:** A process wherein the existence of foreign key values in the parent entity's primary key is verified; if the values cannot be verified, the trigger sets the foreign key values to null in the child entity in order to allow data modification operations to proceed.

**Status Bar:** ER/Studio DA provides statistics pertaining to your logical and physical model in the status bar at the bottom of the application. The table below describes the statistics available on the Status bar:

Data Model Mode	Statistic	Definition
Logical	Views	Total number of views in the current model or submodel
	Entities	Total number of entities in the current model or submodel

Data Model Mode	Statistic	Definition
	Attributes	Total number of attributes in the current model or submodel
	Relationships	Total number of relationships established in the current model or submodel
Physical	Tables	Total number of tables in the current model or submodel
	Views	Total number of views in the current model or submodel
	Columns	Total number of columns in the current model or submodel
	Foreign Keys	Total number of foreign keys in the current model or submodel

**Stogroup:** A set of volumes on direct access storage devices (DASD). The volumes hold the data sets in which tables and indexes are actually stored.

**Sub-Graph:** A group of interconnected entities and views on the model. ER/Studio DA determines the cluster components and attempts to organize each internally as well as the positions of separate clusters in relation to each other.

**Submodel:** An independent view of all or part of a logical or physical model.

**Subtype:** A subset of entity instances that share common attributes or relationships distinct from other subsets.

**Subtype Cluster:** A hierarchical grouping of entities that share common characteristics, but which can be divided into separate entities with distinct entity instances. Also known as a category entity.

**Supertype:** The parent entity in a subtype cluster that represents the superset of the subtypes.

**Surrogate Key:** An attribute or set of attributes that is generated strictly to serve as an entity's primary key. The data in a surrogate key has no inherent meaning or purpose except to uniquely identify every instance of the entity.

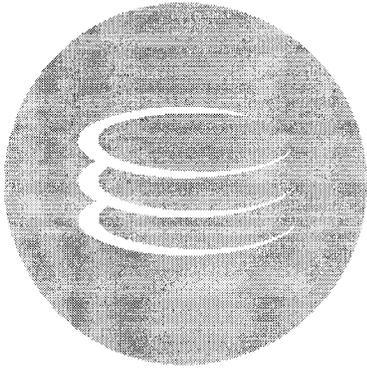
**Synonym:** An alternate name for a database object.

## T

**Table:** The basic unit of data storage in a database. Tables correspond to entities in the logical model.

**Tablespace:** A specialized storage structure used to hold one or more tables.

**Text Block:** Useful information about a diagram.



# **Embarcadero ER/Studio Software Architect 1.0**

After model audits are run, the results are displayed in the Model Audits View. The view provides detailed descriptions for all found errors and allows you to navigate to the corresponding problem element from this view by double-clicking the error message.

## Model Metrics

ER/Studio Software Architect supports a wide range of model metrics. The list of available model metrics can be viewed in the Modeling Quality Assurance Model node of the Preferences dialog. You can define, save, and reuse sets of model metrics. Model metrics will be OCL queries that produce an Integer result and operate in the context of existing metamodels. You can also employ additional OCL operations provided for the metamodel, specified in the OCL operations and OCL library operations tabs in the Modeling OCL page.

After model metrics are run, the results are displayed in the Model Metrics view. You can navigate to the corresponding elements listed in the Model Metrics view by double-clicking the element name.

## Metrics Graphical Representation

Metrics results can also be viewed graphically. Two graphic views allow users to summarize metrics results: bar charts and Kiviat charts. Both charts are invoked from the context menu of the table. The Kiviat chart is used for rows and the bar chart is used for columns.

The bar chart displays the results of a selected metric for all packages, classes, and/or operations. The bar color will reflect conformance to the limiting values of the referenced metric:

The Kiviat chart demonstrates the analysis results of the currently selected class or package for all the metrics that have predefined limiting values. The metrics results are arranged along the axes that originate from the center of the graph. Each axis has a logarithmic scale with the logarithmic base being the axis metric upper limit so that all upper limit values are equidistant from the center. In this way, limits and values are displayed:

## Exporting and Importing Audits and Metrics

You are able to import and export model (but not code) metrics and audits all at once, including sets of named OCL queries on metamodels, and other settings. Model audits and metrics are saved to files with extensions .ModelMetrics and .ModelAudits. When importing such a file, you will completely replace their currently defined model audits or metrics.

## Refactoring

ER/Studio Software Architect leverages refactoring operations provided by the Eclipse platform. Refactoring is available for the model elements in ER/Studio Software Architect projects by means of context menus.

## Version Control

ER/Studio Software Architect supports several version control systems that can be integrated in Eclipse. They would include but not be limited to CVS. Version control in ER/Studio Software Architect enables several users to work with one modeling project.

ER/Studio Software Architect provides context menus to work with CVS. The version control system is set up so that only one user can work with a shared model at a time. In case several users edit the model at a time, users can use the model compare and merge functionality of ER/Studio Software Architect. They can compare the structure of their models and merge inconsistencies if necessary. Alternatively they can revert to the saved version of the model.

## Reference Topics

The reference topics provide detailed information on subjects such as configuration options, GUI elements, dialogs, and wizards references.

All of the reference topics are listed under the **Reference** section in the **Contents** pane of the Help window.

## Typographic Conventions Used in the Help

The following typographic conventions are used throughout ER/Studio Software Architect online Help.

### Typographic conventions

Convention	Used to indicate
Monospace type	Source code, file and folder names, and text that you must type.
<b>Boldface</b>	GUI elements and dialogs.
<i>Italics</i>	Book titles and to emphasize new terms.
KEYCAPS	Keyboard keys, for example, the CTRL or ENTER key.

### Related Concepts

**Documentation Set**

## Tour of ER/Studio Software Architect

### Modeling User Interface

The Modeling perspective is the default perspective. The Modeling perspective provides the following views:

View	Description
Add linked results	Shows results of applying the Add Linked command.
Model Audits	Displays the results of the model audits that are run.
Model Bookmarks	Lists bookmarked model elements.
Model Metrics	Displays the results of the model metrics that are run.
Model Navigator	Provides the logical representation of the model of a project: namespaces (packages) and diagram nodes.
Diagram Editor	Displays created and opened diagrams. When multiple diagrams are used, the diagram editor provides a tab for each diagram.
Properties	Displays the properties for a selected element. The properties for each element are usually divided into different categories.

View	Description
Profile Constraints	Lists available profile constraints.
Profile Validation	Displays results of the profile validation process.
OCL Expression	Enables quick evaluation of OCL expressions in the explicitly specified context (an EM/Studio or EMF model element), or in the context of the current selection.
Last Validation Results	Displays results of the latest validation of a pattern definition.
Pattern Explorer	Enables logical organization of patterns (using virtual trees, folders and shortcuts), and management of recognized instances of patterns.
Pattern Registry	Defines the virtual hierarchy of patterns.

## Model Menu

View	Description
Generate Class Diagram	
Run Model Metrics	Displays the results of the model metrics you run.
Run Model Audits	Displays the results of the model audits you run
Compare with	Each Other (as model elements): Compares two or three selected model elements against each other and shows differences in a separate view  Local Version: Compares a shared resource with a version stored on your disk.
Profile	Uninstall Profiles: Uninstalls the selected profile  Open Profile Definition: Opens the profile definition project.  Deploy Profile: Starts the creating profile plug-in process.  Run Profile Constraints: Runs profile-specific audits.  Convert Properties: Converts profile-specific properties of the projects created in the previous version of ER/Studio Software Architect for Eclipse to the new format. For more information see Converting Profile-Specific Properties topic in the Procedures section.  Preferences: Opens the Profile preferences in the Modeling node.
Documentation	Generate HTML: Opens the Generate HTML Documentation dialog.  Generate Documentation Using Template: Opens the Generate Documentation Using Template dialog.

**Related Procedures**

**Recognizing Patterns**

## Quality Assurance

Quality Assurance provides teams and managers with measures of the quality of their project. As with any Quality Control, the team should understand what is measured, and why. Although audits and metrics are similar in that they both analyze your project, they serve different purposes. Audits and metrics are run as separate processes. Because the results of these two processes are different in nature, ER/Studio Software Architect provides different features for interpreting and organizing the results.

Model Metrics	Describes model metrics.
Metrics Graphical Representation	Describes Kiviati chart representation of metrics.
Exporting and Importing Audits and Metrics	Introduces import and export of audits and metrics.

## Model Audits

A wide range of model audits are supported. The list of available model audits can be viewed in the **Preferences** dialog. You can define, save, and reuse sets of model audits. Model audits are OCL queries that produce Boolean result and operate in the context of existing metamodels. You can also employ additional OCL operations provided for a metamodel, specified in the **OCL operations** and **OCL library operations** tabs in the **Preferences** dialog.

After you run model audits, the results are displayed in the Model Audits View. The view provides detailed descriptions for all found errors and you can navigate to the corresponding problem element from this view by double clicking the error message.

**Related Concepts**

**Quality Assurance**

## Model Metrics

ER/Studio Software Architect supports a wide range of model metrics. The list of available model metrics can be viewed in the **Modeling > Quality Assurance > Model** node of the **Preferences** dialog. You can define, save, and reuse sets of model metrics. Model metrics are OCL queries that produce Integer result and operate in the context of existing metamodels. You can also employ additional OCL operations provided for a metamodel, specified in the **OCL operations** and **OCL library operations** tabs in the **Modeling > OCL** page.

After you run model metrics, the results are displayed in the **Model Metrics** view. You can navigate to the corresponding elements listed in the **Model Metrics** view by double clicking the element name.

**Related Concepts**

**Quality Assurance**

## Metrics Graphical Representation

Metrics results can also be viewed graphically. Two graphic views allow you to summarize metrics results: bar charts and Kiviatic charts. Both charts are invoked from the context menu of the table. Use the Kiviatic chart for rows and the bar chart for columns.

### Bar Chart

The bar chart displays the results of a selected metric for all packages, classes, and/or operations. The bar color reflects conformance to the limiting values of the metric in reference:

- Green represents values that fall within the permissible range.
- Red represents values that exceed the upper limit.
- Blue represents values that are lower than the minimal permissible value.
- A thin vertical red line represents the upper limit and a thin vertical blue line represents the lower limit.

### Kiviatic Chart

The Kiviatic chart demonstrates the analysis results of the currently selected class or package for all the metrics that have predefined limiting values. The metrics results are arranged along the axes that originate from the center of the graph.

Each axis has a logarithmic scale with the logarithmic base being the axis metric upper limit so that all upper limit values are equidistant from the center. In this way, limits and values are displayed using the following notation:

- Upper limits are represented by a red circle. Any points outside the red circle violate the upper limit.
- Lower limits are represented by blue shading, showing that any points inside the blue area violate the lower limit. Note that blue shading does not show up in areas of the graph with lower limits of 1 or 0.

**TIP:** To see the value of an individual data point on the Kiviatic graph, hover your mouse pointer over it to display a popup.

- The actual metrics show up in the form of a star with metric values drawn as points.
- Green points represent acceptable values.
- Blue points represent values below the lower limit.
- Red points represent values exceeding the upper limit.
- Scale marks are displayed as clockwise directional ticks perpendicular to the Kiviatic ray.
- Lower limit labels are displayed as counterclockwise directional blue ticks perpendicular to the Kiviatic ray.

#### Related Concepts

[Quality Assurance](#)

## Exporting and Importing Audits and Metrics

Introduces import and export functionality for audits and metrics.

Refreshing QA Results	How to refresh the QA results table.
Saving and Loading Audit Results	How to save and load audit results.
Saving and Loading Metric Results	How to save and load metric results.
Specifying Quality Assurance Preferences	How to perform quality assurance tasks.
Using OCL in Model Audits and Metrics	How to use OCL expressions in Audits and Metrics.
Using QA History	How to use QA results history.
Viewing Audit Results	How to view audit results.
Viewing Metric Results	How to view metric results.
Viewing Metrics as Graphs	How to view metrics as graphs.
Viewing Problem Detection Audits (Detection Metrics)	How to view Problem Detection Audits.

## Creating a Metrics Chart

You can create a chart in the **Metric Results Pane**.

Metrics charts are created in temporary files which are deleted when the charts are closed. However, you can save graphical information in text files, export it to the desired graphical format, and include graphics in project.

### To create a Kiviat chart

- 1 Select the row that contains the results for the desired element.
- 2 Right-click and choose **Kiviat Graph**.

### To save a chart as image

- 1 In the chart view pull-down menu choose **Save Image As BMP Picture...** or **Save Image As SVG Picture...**
- 2 In the **Save Chart As Image** dialog, navigate to the target location and click **Save**.

### To print a chart

- 1 Browse to the chart you want to print.
- 2 In the chart view pull-down menu choose **Print...**

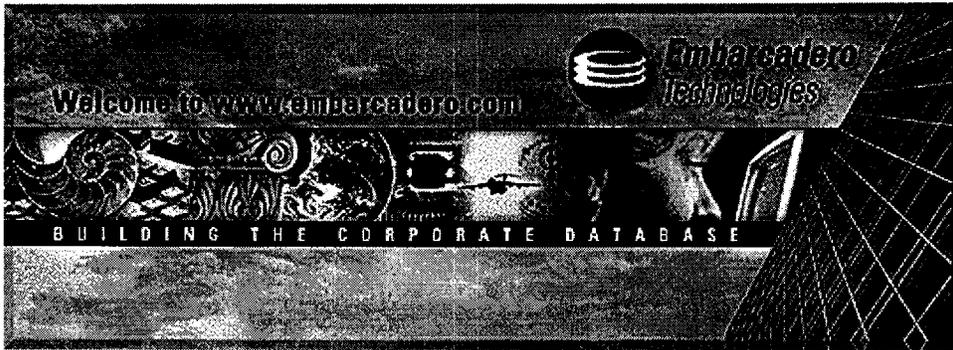
### Related Concepts

**Quality Assurance**

## Grouping and Ungrouping

You can group the results of generated audits using one of five different categories:

- Severity
- Description
- Resource



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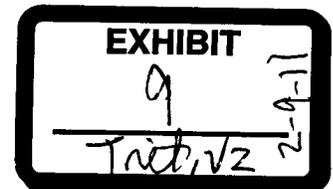
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PC Week Labs has awarded [DBArtisan 4.01](#) the Analyst's Choice award for Database Administration tools saying that "PC Week Labs found little use for other tools once DBArtisan arrived." Read the [review](#) and then [download](#) a trial version now to find out why it has become the tool of choice for thousands of professional DBAs. If you are a current DBArtisan 4.0 user, get your Version 4.01 [upgrade](#) online!

Embarcadero introduces [Rapid SQL 4](#), an integrated server-side SQL programming environment for Sybase, Microsoft SQL Server and Oracle databases. You can now [download](#) a 30-day evaluation copy of the newest release of Rapid SQL and experience the benefits for yourself. To request an upgrade on-line, please fill out our [upgrade request form](#).

Embarcadero is now shipping a major new release of [ER/Studio](#). Dozens of powerful new features have been added, including full round trip design capabilities, IE notation, and blazing graphics performance. [Download a free evaluation](#) of ER/Studio 2.5 and you will quickly see how ER/Studio can help solve your database design problems.

Click [here](#) to view a list of the recipients of the prizes awarded in the DBArtisan 4 Contest which ended December 15, 1997.

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"I lose count on the number of times each day I invoke and use [DBArtisan 4.0](#) from Embarcadero Technologies. For managing Oracle and SQL Server databases, *this tool has no rivals*", says Robin Schumacher in his column entitled "My Fab Five" from the latest issue of Intelligent Enterprise. "An elegant and easy-to-navigate interface coupled with a flexible and effective method of accomplishing everyday database chores makes this product a *real time saver and power tool that no DBA should be without.*" Download and [evaluate](#) a free 30-day trial copy today.

DBMS readers have again recognized Embarcadero's DBArtisan as the top database administration tool in the 1998 Readers' Choice Awards. DBArtisan was chosen for the second time from a readership of more than 100,000 IT professionals as the DBA tool of choice for Oracle, Sybase and Microsoft SQL Servers. Discover why our users voted it their favorite and [download](#) a free 30-day trial copy. Current users of DBArtisan can [upgrade](#) to the latest version on-line.

In its latest release, [ER/Studio 3](#) introduces unprecedented functionality to get you from a database design to a live, fully customizable front-end application in minutes! Many new and advanced features such as drag-and-drop object reuse and wizard-driven application generation make it easier than ever to get applications designed, validated, built, distributed and running within your enterprise. Read the [review](#) to see why PCWeek labs found ER/Studio "...easier to use and provided more data modeling options than ERwin and PowerDesigner." [Download a free evaluation](#) of ER/Studio to take advantage of these new features and more! Current users of ER/Studio can click [here](#) to upgrade.

With the release of [Rapid SQL 5](#), Embarcadero further strengthens its lead in the database server-side development tools market. This major new upgrade features support for SQL Server 7, Oracle 8, Sybase 11.9 and IBM DB2 Universal Database as well as tight integration with Microsoft Source Safe, PVCS and MKS version control systems. Version 5 also offers database project management, build management facilities, parallel query capabilities and a powerful new data editor! You can [download](#) a 30-day evaluation copy of the newest release of Rapid SQL. If you currently own Rapid SQL, you can now upgrade to version 5 online.

Embarcadero Technologies and Tivoli Systems, Inc. have teamed up to provide best-of-breed enterprise database management by integrating Embarcadero's award-winning [DBArtisan](#) with Tivoli Enterprise. The **upcoming DBArtisan 5.0** will provide seamless links into Tivoli Enterprise providing Tivoli users greater depth of control over enterprise applications and databases. The combined products automate database management tasks and enable customers to accomplish highly complex change management, security management and storage management tasks across multiple database environments using Tivoli's single action management technology.

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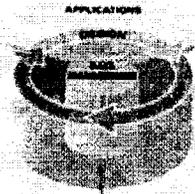


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**ER/Studio 5.1 & Repository 1.2**  
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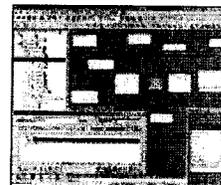
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## Release Notes

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Embarcadero ER/Studio is a data modeling application for logical and physical database design and construction. Its powerful, multi-level design environment addresses the everyday needs of database administrators, developers and data architects who build and maintain large, complex database applications. ER/Studio's progressive interface and processes have been logically organized to effectively address the 'ease-of-use' issues that have plagued data modeling tools for the past decade. The application equips the user to create, understand and manage the mission-critical database designs within an enterprise. It offers strong logical design capabilities, bi-directional synchronization of logical and physical designs, automatic database construction and Java application generation, accurate reverse-engineering of databases, and powerful HTML-based documentation and reporting facilities.

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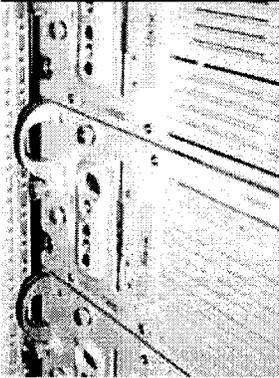
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#### ERStudio 5.5.1 Updates

##### **Entity Tool Tip Updates**

The Entity Tool Tips sub menu now includes an option to display column definition information. If you set the tool tip to display a column definition, when you hover over an entity or table, ER/ Studio displays the column definition.

##### **Generate Physical Model Updates**

ER/Studio's Generate Physical Model Wizard now includes an option to handle invalid characters by letting you preserve them, or replace them with underscores. Note: Options such as removing spaces, replacing spaces with underscores or removing invalid characters are no longer applied to the logical entity and attribute names in the physical model.

##### **Macro Shortcut Menu**

ER/Studio 5.5.1 now includes Macro shortcut menus throughout the product. These new menus eliminate the need to go to the Macros tab of the Diagram explorer each time you want to run a macro. In addition, you can now assign macros to new customizable menus located throughout the product. You can find new menus on the main application menu bar as well as on the various shortcut menus throughout the application.

**Merge Update Model Wizard Updates**

ER/Studio's Merge Update Wizard now lets you filter object names from comparison results. The Comparison Options panel of the Wizard now includes a Name check box that you can select or clear depending on your comparison needs. Previous versions of the application automatically included this data and required that you manually clear these items from the result set.

**Modify Database Wizard Updates**

ER/Studio's Modify Database Wizard now includes an option to reverse engineer only the selected tables. This option makes the comparison between the model and the database much faster since only objects selected in the model are reverse engineered into the compare window.

**Print Dialog Box Updates**

ER/Studio's print dialog box now includes a Unselect Pages button. This new feature lets you remove pages from your print output.

**SQL Server Support Updates**

The Columns Tab of the Table Editor now includes the following update: You can now specify a user defined name for column level defaults.

The Columns Tab of the Table Editor now includes the following update: You can now specify a user defined name for column level defaults.

The Generate Database Wizard now includes the following update for SQL Server:

You now have the option to surround object names in brackets.

The Storage Tab of the Index Editor now includes the following options: Pad Index and SortInTempdb.

**Update Model Wizard Updates**

The update Model Wizard includes the following updates:

- ER/Studio's Update Model Wizard now lets you add a new physical data model, or update an existing one using a SQL script. Previous versions of the application limited you to live databases. If you are updating a physical model, you also have the option to select tables and views you want to compare against the database instance.
- ER/Studio's Update Model Wizards now includes an option to reverse engineer only the selected tables. This option makes the comparison between the model and the database much faster since only objects selected in the model are reverse engineered into the compare window.

**ERStudio 5.5 Updates****New Diagram Auto Layout Utilities**

ER/Studio 5.5 introduces completely automatic diagramming 'aesthetics'. The product implements a series of 'one-click' layout options that automatically organize complicated diagrams to provide you with a more effective way to navigate data model content, and a more elegant data model display. This also reduces the amount of time required to make your diagrams presentation-quality.

**New Relationship Line Flexibilities**

ER/Studio 5.5 introduces significant changes to its relationship line diagramming behavior. Improvements in relationship line fluidity in movement, adjustability, 'n-bending,' and routing have been implemented.

**New Diagram Auto Layout Utilities**

ER/Studio 5.5 extends diagramming navigation capabilities to include new features designed to assist the you in navigating, panning, and zooming through a diagram. New features include:

- New Pan Diagram Utility
- New Dynamic Zoom Utility
- New Navigate Relationship Utility
- New Explorer Browser Entity and View Nodes

#### **New Color & Font Property Capabilities**

ER/Studio 5.5 introduces the ability to granularly change the color and font properties of diagram objects (entities, attributes, relationships views, etc).

- Individualized Entity/Attribute Color and Fonts
- Individualized Relationship Color
- Individualized View Relationship Color

#### **Entity/Table Display Updates**

ER/Studio 5.5 introduces far more flexibility in displaying the content of a entity, table or view on the diagram. You can now select new styles of entity display (such as 'Definition' or 'Note'), and you can also customize the display according to your environment needs.

#### **View Display Updates**

You can now manage new display settings for Views as well as display Views on a diagram at a different display level than entities.

#### **New Entity Re-sizing Updates**

ER/Studio now lets you resize and stretch entities etc. at smaller zoom scales. The new updates also let you customize the size of Entity and View objects to to hide attributes when necessary. In previous releases, you needed a higher resolution to modify the size of an entity on the diagram. Also in previous releases, you were limited to the width of the entity's longest attribute, which limited the entity's size to be no smaller than the width of the longest attribute.

#### **New Diagram Object Pop-Up Windows**

ER/Studio 5.5 introduces new Pop-up Windows, which provide information when you move your pointer over entity, view, and relationship objects.

#### **Enhanced Diagram Printing Dialog and Features**

ER/Studio 5.5 introduces an entirely updated printing facility. The new facility leverages the same new sophisticated diagramming and navigation features used for general diagramming in an entirely new Print and Print Set up system.

#### **Alternate Key Propagation**

ER/Studio 5.5 introduces the ability for a you to select and propagate an Alternate Key (logical model) or a Unique Index (physical model) to a child entity or table. In previous releases of the application, propagation was limited to the 'declared' Primary Key of an entity or table and not any specified Alternate Keys or Unique Indexes. You can find this new feature in the Relationship Editor (for both the logical and physical models).

#### **Nested Submodels**

ER/Studio 5.5 advances its popular 'Submodeling' feature by letting you derive a Submodel from a Submodel, and then display the Submodel relationships by nesting Submodel folders in the Diagram Explorer. You can find this new feature in the Create Submodel facility. Also, you can navigate to Nested Submodels using the Diagram Explorer.

#### **Reverse Engineering Wizard Updates**

ER/Studio 5.5 introduces several improvements to the product's Reverse Engineering utility:

- Cross Schema Selectivity for Oracle/DB2.
- Diagram Layout Preference, which lets you choose the diagram layout before completing the reverse engineering job.
- Greater Object Selectivity, which lets you make individual selections before reverse engineering.
- Wizard Quick Launch, which lets you complete the wizard once, and then save your settings. After you have saved your settings, you can do a '1 touch' operation the next time you want to reverse engineer a database, or you can use the settings file as a basis for the reverse-engineering option selection.

#### **Forward Engineering Wizard Updates**

ER/Studio 5.5 introduces vast improvements to the product's Forward Engineering utility:

- Greater Object Selectivity, which lets you make individual selection before forward engineering to the database or to a file.
- Wizard Quick Launch which lets you complete the wizard once, and then save your settings. After you have saved your settings, you can do a '1 touch' operation the next time you want to forward engineer a database or file, or you can use the settings file as a basis for DDL generation option selection.
- DDL Output Preferences:
  - The ability to select the 'style' of DDL output such as 'order by referential chain' or alphabetical order object generation.
  - Greater selectivity in object DDL generation than provided in previous releases of the application. For example, you can select several tables, and just generate their indexes or constraints.
  - A SQL Preview capability that lets you walk through the DDL generation wizard, set options, and preview the DDL output before starting the default SQL Editor or generating the code to a live database.
- Enhanced Options for generating check constraint, which provides an optional generation of check constraints at table level for all platforms and optional generation of check constraint names for column level check constraints.

#### **Data Dictionary Updates**

ER/Studio 5.5 introduces updates to its popular Data Dictionary system

- Implementation of Definition and Note documentation fields for Domains
- Implementation of a Default Physical Column name for Domains
- Migration of domain definition from Domain to new attribute using the drag and drop feature
- Domains can be copied within the dictionary tree using simple copy/paste menus
- Migration of bound "Attachment" information from Domain to bound column when the attachment type allows binding to attributes as well as domains
- Domain Override System: The ability to modify properties of an attribute/column when it is bound to a Domain or User Datatype. The properties include definitions, notes, check constraints, rules, and defaults
- Domain Classification System: The ability to create domain "folders" in order to classify domains in unique groups, as the user prefers, and to move domains from one folder to another and the ability to re-route existing Domains into new folders through new short-cut options.

**Expanded Object Support****Oracle Updates**

New 9i Datatypes:

- **TIMESTAMP:** Implements all Time Zone options
- **INTERVAL:** Implements 'Year' and 'Day' options

**Packages:** Implements complete Body and Header support as well as parsing of dependant objects.

**Sequences**

**Materialized Views**

**Synonyms**

**SQL Server Updates**

**Functions**

**Computed Columns**

**DB2 Updates**

DB2 UDB for OS390 Identity Column Support (Versions 6 and 7)

**Sybase Updates**

Adaptive Server Enterprise Version 12.5 Tolerance

Merge Model/Modify Database/Update Model Updates [back

**Merge Model/Modify Database/Update Model Updates**

ER/Studio 5.5 introduces the following Merge Model/Modify Database/Update Model updates:

- 'Select-All' and 'Unselect-All' has been added to the user interfaces to all compare/merge utilities.
- Output results of the differences found to HTML or RTF to do off-line analysis of the changes.

**Check Constraint Naming Field**

ER/Studio 5.5 introduces the ability to uniquely name or modify reverse engineered names for Check Constraints.

**Infer Objects for Import SQL**

ER/Studio's Import SQL feature now offers the same 'Infer Objects' options only offered in the 'live database' reverse engineering dialog in prior versions. Users can now:

- Infer Primary Keys
- Infer Foreign Keys from Indexes
- Infer Foreign Keys from Names
- Infer Domains

**Repository 2.0 Updates****Exclusive Checkout Option**

Repository 2.0 introduces the option to provide the person checking out a diagram or diagram objects with 'exclusive' rights during the check out session. This system ensures that only the person who checked out an object (and its dependencies) is the only one who can modify it and submit data to the Repository. Other users will have read-only and/or 'Delayed Check Out' access during the time that the objects are checked out. This feature is offered as a Repository Options preference and/or will prompt the user during a checkout operation to 'exclusively' check out the diagram objects.

**New Repository Status Icon Support**

With the addition of the Exclusive Checkout Option in Repository 2.0 and more frequent usage of Delayed Check Out capability (a feature of prior versions),

Repository has made the following changes to its status notification icon system:

- New Icon Symbols
- New Pop-up Help

#### **Repository Performance Updates Stored Procedure Implementation**

Repository 2.0 introduces a series of stored procedures to perform various operations faster as pre-compiled code located directly on the Repository Database.

#### **Native Connectivity Implementation**

Repository 2.0 eliminates its dependency on ODBC and in its place will implement the hosted RDBMS's native connectivity layer to support given features such as bulk writing to the database, et al. The table below describes the required pre-requisites for Repository Server and Repository Database:

<b>Supported Repo Database</b>	<b>Repository Server Pre-Reqs</b>	<b>Repository Database Pre-Reqs</b>
Oracle 8	Oracle 8.1.7.3 Client Utilities	Oracle 8.1.x Server
Oracle 9	Oracle 9.0.x Client Utilities	Oracle 9.0.x Server
SQL Server 7 or 2000	MDAC 2.6 (or higher) Client Utilities	SQL Server 7 or 2000 Server
Sybase ASE 12	Sybase 11.9 Client utilities (or higher)	Sybase ASE 12.x Server
IBM DB2 UDB 7.x (NT or UNIX)	DB2 UDB 7.X Client Utilities	DB2 UDB 7.x Server

#### **Re-tuned Repository SQL DML**

The SQL submitted to Repository Database has been tuned and packaged to eliminate unnecessary activity and reduce time. **Schema Denormalization** Repository 2.0's schema has been modified where necessary to optimize performance by denormalizing certain structures to better performance.

#### **Temporary Storage Implementation**

Repository 2.0 makes use of temporary tables (TempDb in SQL Server/Sybase and alternate temporary Tablespace assigned to the temporary tables for Oracle and DB2) to improve performance when adding or updating data in the repository database. These work in conjunction with the stored procedures (mentioned below) which are designed to select model data from the temp storage tables and insert into Repository's 'production' tables. All traces of data are removed from the Temp table storage upon completion of their job.

#### **Other Repository 2.0 Features and Updates**

ER/Studio Repository 2.0 introduces the following features and updates: The diagram deletion mechanism now allows for the complete deletion of all diagram data from the Repository database. Previous releases would mark the data in the Repository with a bit setting 'Is Deleted'.

#### **ERStudio 5.1.1 Updates**

##### **Split and Partial Primary Key Propagation Support**

Split Key Propagation:

ER/Studio now lets users elect to "split-up" the members a non-identifying propagated concatenated key to promote some of the propagated key's members as "primary key" while leaving other members as non-PK foreign keys. Users can take advantage of this new feature by selecting the "Add Primary Key " check box in the Entity or Table's Attribute Column Editor.

**Partial Key Propagation:**

ER/Studio now offers the option to hide one, some or all members of a propagated primary key throughout the n-levels of children the key passes. This new feature is useful for specific circumstances where modelers want to use a diagram to depict a situation where some or possibly none of the members of a propagating key are not propagated to the child in the database, yet the relationship must be displayed on the diagram to demonstrate dependency. For example, users may need to diagrammatically depict a relationship between two entities where the referential integrity of the relationship is not done through traditional propagated pk/fk constraints, but through custom triggers or application logic. Modelers, however, would still like to have a relationship displayed between the two tables on the diagram to explain business rules. This new feature accommodates both the user and modeler in this example. Users can take advantage of this new feature by selecting the "Hide Key Attribute"/"Hide Key Column" check box in the Entity or Table's Attribute Column Editor.

**Infer Objects Option for SQL Import**

ER/Studio now gives users the option to leverage ER/Studio's Infer Objects capabilities when importing SQL DDL scripts. This new feature is available on the Import Database SQL file dialog box. It lets the model provide Primary Keys, Foreign Keys and Domains when none are explicitly declared in the SQL script. Previously, this feature was limited to reverse-engineering from a live database.

**Object Owner Display Setting for Diagram**

ER/Studio now lets you see object owner information on the diagram for Tables and Views. You can set this option on or off depending on your needs. For diagram specific settings, you can set this option through the View menu, and for global settings you can set this option on the Application tab of the Options dialog box.

**Object Ownership Support for Views**

ER/Studio now displays the database view owner in the Views Editor. This new field is editable, so you can add an owner name or edit an existing owner name. This new feature facilitates implementing cross-schema diagrams, which are necessary for DDL generation.

**Automation Interface Updates**

The following updates have been made to ER/Studio's automation interface object model:

**Properties**

We have added the Hidden property to the AttributeObj. This is the Boolean flag indicating that an Attribute is hidden in the Diagram display.

**Methods**

We have added the Delete NamedRelease to the DiagramManager Object. This method lets you Delete a Named Release from the Repo Server using the given Name.

**Repository 1.2.1 Updates****New Repository Features****Delete Named Release**

ER/Studio Repository now lets you delete Named Releases of diagrams stored in the ER/Studio Repository. To take advantage of this new feature, log in to a Repository server, and you must have some Named Releases set in the server.

**Changes in Repository's Database Schema 1.2.1**

The Following items have been changed in the ER/Studio Repository Database's Schema for version 1.2.1. These will be automatically modified

when upgrading from ER/Studio Repository 1.2 to 1.2.1.

#### Deleted Repository Schema Objects

--Rows have been deleted from the Profile\_Privilege\_Set\_ID column of the Profile\_Privilege\_Set table. Specifically where Profile\_Privilege\_Set\_ID >= 28 and Profile\_Privilege\_Set\_ID <= 31

Updated Repository Schema Objects --The Repository's Release table has been modified. Specifically it has introduced two new columns, IS\_DELETED (NULL) and DIAGRAM\_ID (NOT NULL).

#### ERStudio 5.1 Updates

##### **Attachments System**

The ER/Studio Attachments System is a structured way for a user to associate a piece of information (date, external file, number, text, etc.) to an object in a data model. The Attachments System includes Attachment Types, which are used to organize Attachments and determine their usage, and Attachments, which hold information that may be associated with a diagram object.

Attachments allow the ER/Studio data model to house and maintain more information. In the past, ER/Studio's Definitions and Notes fields served as the exclusive place to capture text-based information which assisted in describing model objects. Now you can use Attachments to expand the scope of information that you can capture within a data model, or that you can link outside the data model. Attachments are a new addition to ER/Studio's Data Dictionary System. You can re-use across a single DM1 file, multiple DM1 files (through ER/Studio's "Import Data Dictionary" system). Using Attachments allows for greater accuracy and consistency in documenting important information about the diagram.

##### **Reference Values System**

Reference Values are a new addition to ER/Studio's Data Dictionary System. The new Reference Values System lets you explicitly indicate business data "values" of an attribute. These values can represent either real data values such as 'look up' or 'code value' table columns managed within application, or they can represent rule or constraint values applied to columns. Reference Values are beneficial to maintain in a data model since they allow you to communicate the identity of the values more clearly through reporting and data modeling. You can re-use across a single DM1 file, multiple DM1 files (through ER/Studio's "Import Data Dictionary" system).

##### **DB2 OS390, DB2 UDB, and Oracle Storage Object Support**

ER/Studio now provides storage object support for Oracle 7.x or later, IBM DB2 for OS/390 6.x or later and IBM DB2 UDB 5.x or later. The table below describes the supported storage objects:

DBMS	Supported Objects
Oracle 7.x - 9.x	Tablespace
	Rollback Segment
DB2 OS/390 6.x - 7.x	Tablespace
	Database
	StoGroup
DB2 UDB 5.x - 7.x	Tablespace
	Buffer Pool
	Node Group

##### **DB2 for AS400 Support**

ERStudio 5.1 now introduces support for DB2 for the AS400.

##### **Oracle9i Support**

ERStudio 5.1 now includes support for Oracle 9i. Version 5.1 manages those Oracle features which are currently supported in ER/Studio's Oracle 8i

platform. Additional Oracle features and functionality will be introduced in future releases.

#### User Interface Updates

ER/Studio now includes the following User Interface Changes:

**Explorer Browser:** On the Explorer Browser, the Procedural Logic tab is now called Schema Object. This new tab includes:

- Scripted Stored Procedures (Oracle, Sybase, SQL Server, DB2)
- Functions (Oracle & DB2 UDB)
- Storage Objects:
  - Tablespace (Oracle & DB2)
  - Rollback Segments (Oracle)
  - Databases (DB2 OS/390)
  - StoGroups (DB2 OS/390)
  - Buffer Pools (DB2 UDB)
  - Node Groups (DB2 UDB)

Note:

Reusable Stored Procedures and Triggers have moved to the Data Dictionary tab.

**Object Ownership Implementation:** Owner information for database tables is now exposed for purposes of implementing cross-schema diagrams, which are necessary for DDL generation.

**Data Dictionary Binding Information:** The Data Dictionary now includes a new shortcut menu: Binding Information. This menu item is intended to assist users on locating where Data Dictionary elements are distributed to within a diagram .

**Model Level Properties:** Logical or Physical "Main Models" in ER/Studio now contain Property Editors.

**Physical Model-level Properties:** Pre/Post SQL Implementation: ER/Studio's Physical Model Table and View editor's are equipped with Pre/Post SQL field to allow for the input of any SQL before (Pre) the table or view CREATE statement or after (Post). Now, with ER/Studio 5.1, the same notion applies to the Main Model level. You can apply Pre/Post SQL statements before the generation of the model objects of the physical model, or after.

**Report Updates:** ER/Studio's RTF and Intranet reporting systems have implemented new changes to accommodate the new object types now supported (i.e. Storage Objects, Attachments and Reference Values). For example, the HTML reports ("Intranet Dictionary") can now leverage OLE embedded technology for Attachments bound to the objects in data models through the new Attachment system.

#### Repository 1.2 Updates

##### Object Updates

Repository Version 1.2 version includes new objects, along with additions and alters to existing tables. For detailed information about these updates, please click the corresponding link below:

[New Repository Objects](#)

[New Table Rows](#)

[Altered Tables](#)

In addition, the following tables have been dropped from the Repository Schema:

AppGen\_Attribute  
 AppGen\_Attribute\_Ver  
 AppGen\_Entity  
 AppGen\_Entity\_Ver  
 AppGen\_Field  
 AppGen\_Field\_Ver  
 AppGen\_Form\_Field  
 AppGen\_Form\_Field\_Ver  
 AppGen\_Form\_Link  
 AppGen\_Form\_Link\_Ver

AppGen\_Model  
AppGen\_Model\_Ver  
AppGen\_Relationship  
AppGen\_Relationship\_Ver  
AppGen\_Search\_Column  
AppGen\_Search\_Column\_Ver

#### **Licensing for Repository Server**

Embarcadero Technologies licensing is now enabled for the ER/Studio Repository.

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#### ERStudio 5.0 Updates

##### **Increased Support for IBM DB2 Universal Database**

ERStudio 5.0 introduces a raft of new features to advance its support IBM's Universal Database Versions 6.x and 7.x for NT, UNIX and OS/390. New features include:

- Identity Column Support
- Column and Index Partitioning
- Trigger Support
- Stored Procedure and Function Support
- DB2-specific Alter-database SQL generation

Introducing Embarcadero Repository 1.1

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#### Embarcadero™ Modeling Solution Kit

##### Bringing Together Application and Database Design

Real-time collaboration, common metadata, and project synchronization between developers and data modelers are essential for application development life cycle success. With the Embarcadero Modeling Solution Kit, Embarcadero brings together award-winning, modeling-based solutions to unite and simplify enterprise application-to-database development challenges. The kit consists of Embarcadero ER/Studio™ and Embarcadero Describe™, which have been tightly integrated with a bi-directional bridge to allow organizations to leverage the expertise and advantages in both design domains.

#### Embarcadero ER/Studio™

ER/Studio is an award-winning, data-modeling application for logical and physical database design and construction. Its powerful, multi-level design environment addresses the every day needs of database administrators, developers and data architects who build and maintain large, complex database applications. ER/Studio's progressive interface and processes effectively address the ease-of-use issues that have plagued data modeling tools. The application enables users to create, understand and manage mission-critical database designs within an enterprise. It offers strong logical design capabilities, bi-directional synchronization of logical and physical designs, automatic database construction and Java application generation, accurate reverse engineering of databases, and powerful HTML-based documentation and reporting facilities.

#### Embarcadero Describe™

For organizations working with Java, C++ and IDL, Describe™ is a next-generation UML design and development tool with rich modeling features and productivity-focused utilities that simplify analysis, design and implementation. Describe offers seamless, embedded integration within leading Java IDEs to provide a single modeling and development environment. With superior navigation, wizard-based automation of common tasks, and synchronous, round-trip engineering, Describe turns UML into a live tool for understanding and manipulating the source base.

#### Collaborative Modeling Bridge

Together, the Modeling Solution Kit provides a sophisticated, wizard-driven solution for resolving the complexities of mapping application objects to their relational counterparts at the database level. As application development projects move forward, the bridge maintains these critical relationships between UML and entity-relationship (R\ER) model views, and allows seamless, bi-directional, updating of common "persistent" project metadata.

#### Modeling Solution Kit Features:

##### **Preferred Notation Support**

For sophisticated enterprise architectures, no single notation provides all of the necessary support for modeling application and database designs. Embarcadero provides a complete solution that leverages the best in both ER and UML, and enables both database designers and application developers to work in an ideal environment.

##### **Advanced Mapping Capabilities**

Users now have the ability to set up one-to-one and complex, one-to-many mappings. Class and entity mappings include translation of associations and generalizations to logical data model relationships and super-type/sub-type clustering.

##### **Wizard Driven Process**

A wizard-driven process, initiated from either ER/Studio or Describe, ensures that users of any skill level can understand how to resolve, successfully and efficiently, the mapping problems between UML class and data models.

##### **Synchronize Models**

Once the mappings have been established, UML and data model designs are kept synchronized as application and database development projects progress – or, as is often the case, roll backwards.

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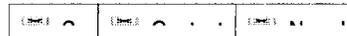
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Our software products enable companies to build, optimize and manage their critical business applications and underlying databases. Embarcadero leads the market in providing high quality, easy-to-use database and application development tools that deliver cost-effective solutions.



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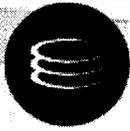


A next generation goals performance testing solution. Register to Evaluate

**In the News**

[ER/Studio 6.0 Delivers | Collaboration Enhancer](#)  
Embarcadero announce release of ER/Studio 6.0 enabling disparate team work together more easily deliver projects more quickly and with greater confidence.

[Speed Data Integration DT/Studio 2.0](#)  
Embarcadero announce release of DT/Studio 2.0 enables rapid data integration and provides new design features that streamline data flow process.



**EMBARCADERO  
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## **ER/Studio 7.0 New Features Guide**

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Embarcadero Technologies, Inc.  
100 California Street, 12th Floor  
San Francisco, CA 94111 U.S.A.

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## New Features Summary

### Physical Database Design Updates

- **Security Management** - Manage users, permissions and roles in any physical or logical model. You can propagate permissions down to disparate physical models and synchronize users, roles and permissions between the model and a database.
- **Capacity Planning** – Forecast row count and growth rates for tables and calculate future storage requirements. You can predict space requirements for storage objects, tables and indexes and print reports showing needs months or years in advance.
- **Off-line ALTER code generation** – Automatically generate ALTER code when comparing two physical models or comparing a physical model to a SQL file.

### Model Management Updates

- **Domain Inheritance** – ER/Studio 7.0 now supports inheritance structures of domains. Derive new domains from existing domains for platform-specific needs, or for building sets of related domains, for example, “Phone” and “International Phone.”
- **User Defined Mappings** - ER/Studio 7.0 now allows the modeler to define their own mappings between the logical and physical models.
- **Add New Model Updates** – Import ER/Studio models or DT/Studio models using the “Add New Physical Model” wizard, in addition to the existing reverse-engineering and SQL capabilities.
- **Submodel Synchronization Utility** – Synchronizes submodels between models.
- **Submodel Editor Updates** – Gives detailed control over construction and maintenance of submodels, allowing you to add or remove related objects.

### Data Warehousing Updates

- **Data Lineage Documentation** - Lets you show source-to-target mapping between complex systems like specialized data marts, decision support systems and transactional systems.
- **Data Movement Rules** - Define rules that document exact requirements for data loading, updating, archiving and purging.

### Repository Management Updates

- **Nested Projects** – ER/Studio 7.0 lets you nest the structure of your projects. Nested hierarchies allow high levels of organization and more advanced repository security implementation.
- **Branch and Merge** – Diagram branch and merge capabilities in Repository allow for more complex model versioning and deeper team collaboration as the Repository diagrams evolve.
- **Enterprise Dictionary Binding Dialog Overhaul** – A completely new interface manages the Enterprise Data Dictionary analysis of object binding across the repository. New filters and reporting capabilities allow repository stewards to customize the metadata presented to them.

### Database Management Systems Updates

- **Generic ODBC ANSI platform support** – Handle any ANSI-compliant data source that has an ODBC driver. This broadens your support to include platforms such as NonStopSQL, RedBrick, PostgreSQL, Progress, Pervasive, TimesTen, and Sybase IQ.

- SQL Server Updates
  - SQL Server 2005 Support
  - MS\_Definition Support – ER/Studio 7.0 introduces round-trip support for column- and table-level definitions between the model and SQL Server database.
- MySQL Updates including:
  - HEAP table type
  - SET and ENUM datatypes
- DB2 z/OS v8.x Support

**New Licensing**

A floating license server, the Embarcadero License Server, is available and can manage licenses for all Embarcadero applications on your network from a single console.

## Top New Features

### Physical Database Design Updates

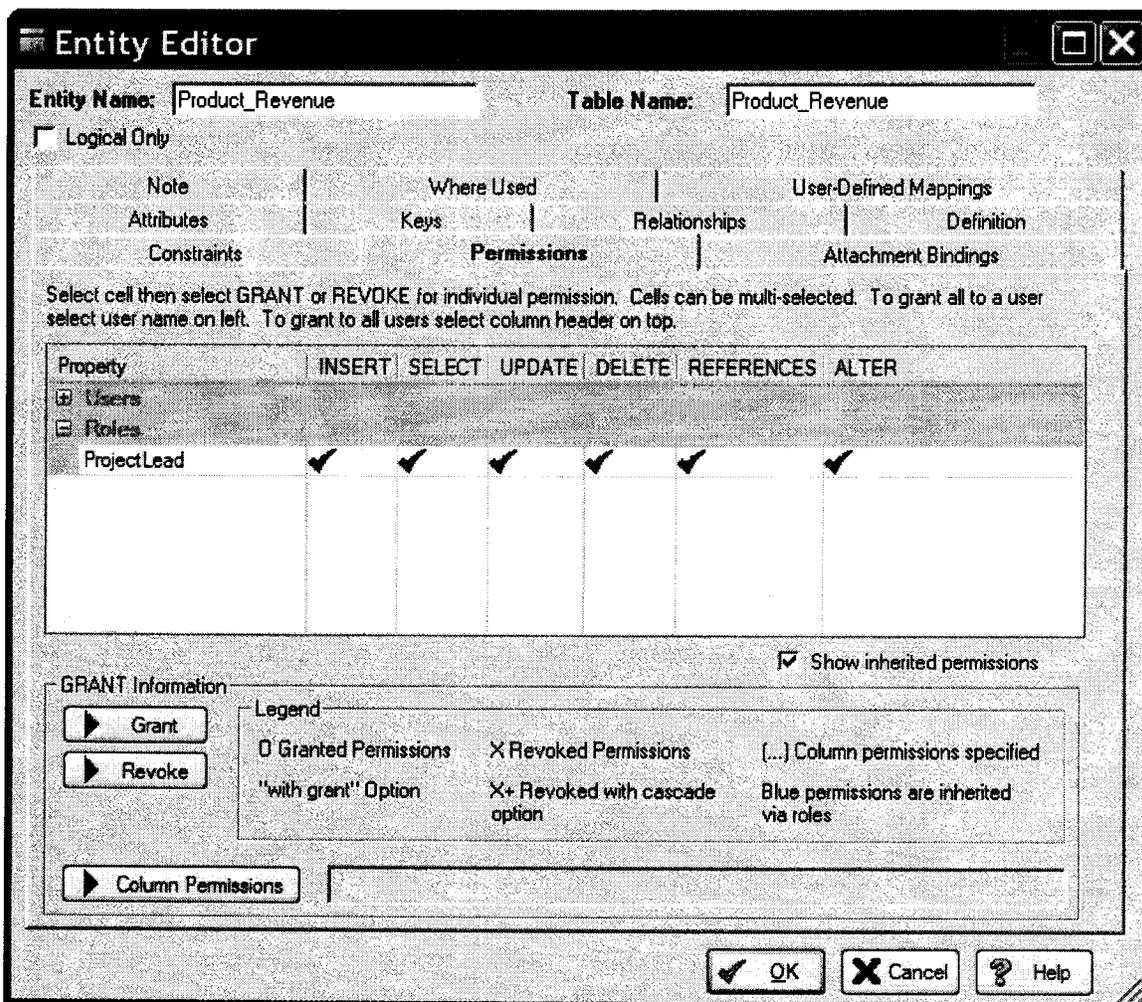
#### Security Management

You can manage users, permissions, and roles within a physical model. There are new user and role wizards and permission tabs on object editors.

Permissions are supported in both the logical and physical models. Permission support in the logical model allows you to manage common security and users across DBMS platforms. The physical model support is limited to Oracle, DB2 LUW and z/OS, Sybase ASE and SQL Server. Submodel permission management is similar to tables and procedures: any user/role in the main model can be added or removed from submodels.

See the Help Documentation for a complete list of security settings listed by platform and object.

You will see the additional controls on familiar objects such as nodes in the left explorer pane, table/entity editors (below) and wizards.



Assigning permissions to users at the object level

To get started with permissions you first add a role and define the level of control for that role, then add users and assign the role to them.

To Add a role:

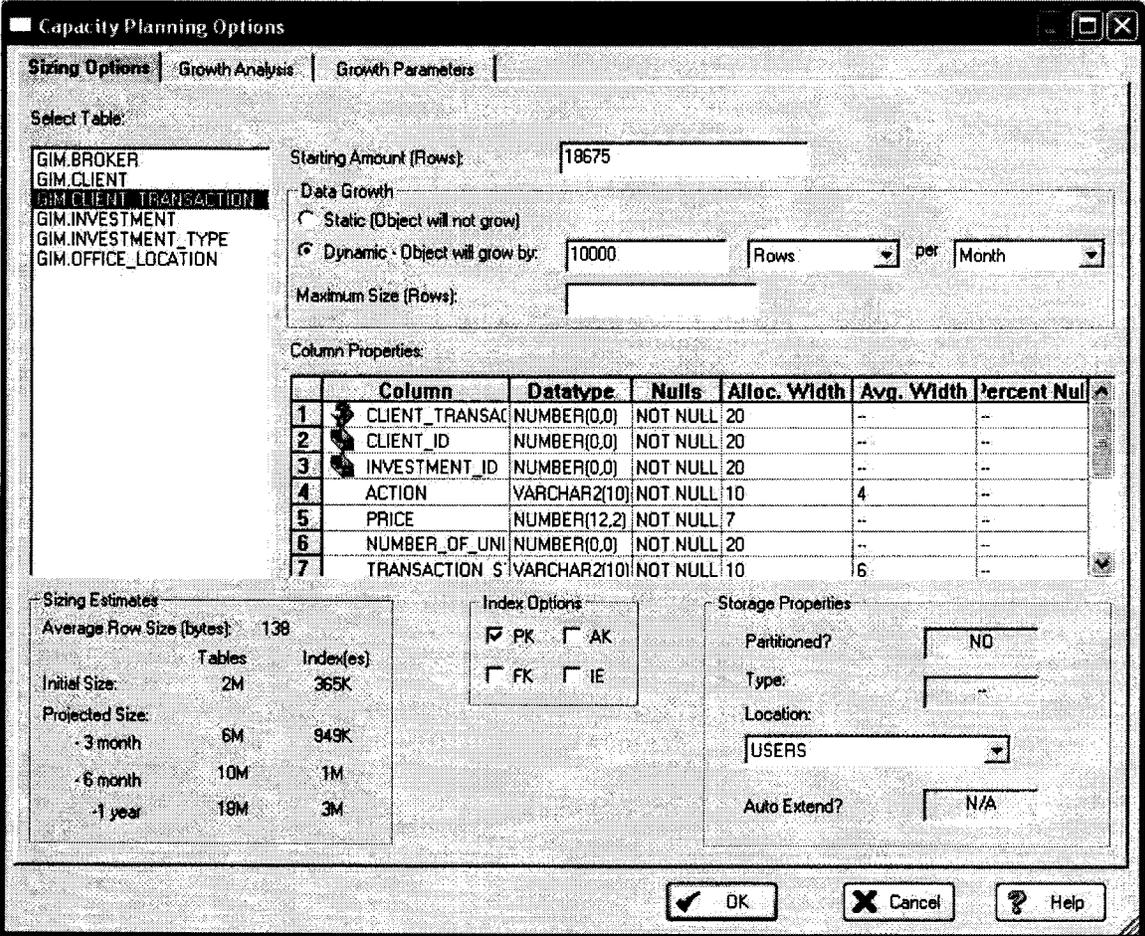
- 1. In the Diagram Explorer Pane, right-click on the "Roles" node.
- 2. Select "New Database Role..."

To Add a user:

- 1. In the Diagram Explorer Pane, right-click on the "Users" node.
- 2. Select "New Database User..."

### Capacity Planning

You can forecast storage requirements of newly implemented or existing database systems so budgeting and engineering resources are planned well in advance. Capacity planning metrics can be stored for each table so the table is properly sized before implementing in a database. You can export these metrics in formats such as RTF or CSV so users can draft their own customer reports for the growth patterns of a physical model.



Forecasting growth requirements

The Table Editor has a new Capacity Planning Tab, and you can extend planning to the entire physical model.

To launch the Capacity Planning Options utility:

1. Display the Physical Model.
2. From the main menu, select Database > Capacity Planning.

### **Offline ALTER SQL Generation**

You can create ALTER code without a database connection, helpful for users who do not have access to a “live” database. This lets you generate ALTER SQL synchronization scripts when comparing one physical model to another.

### **Model Management Updates**

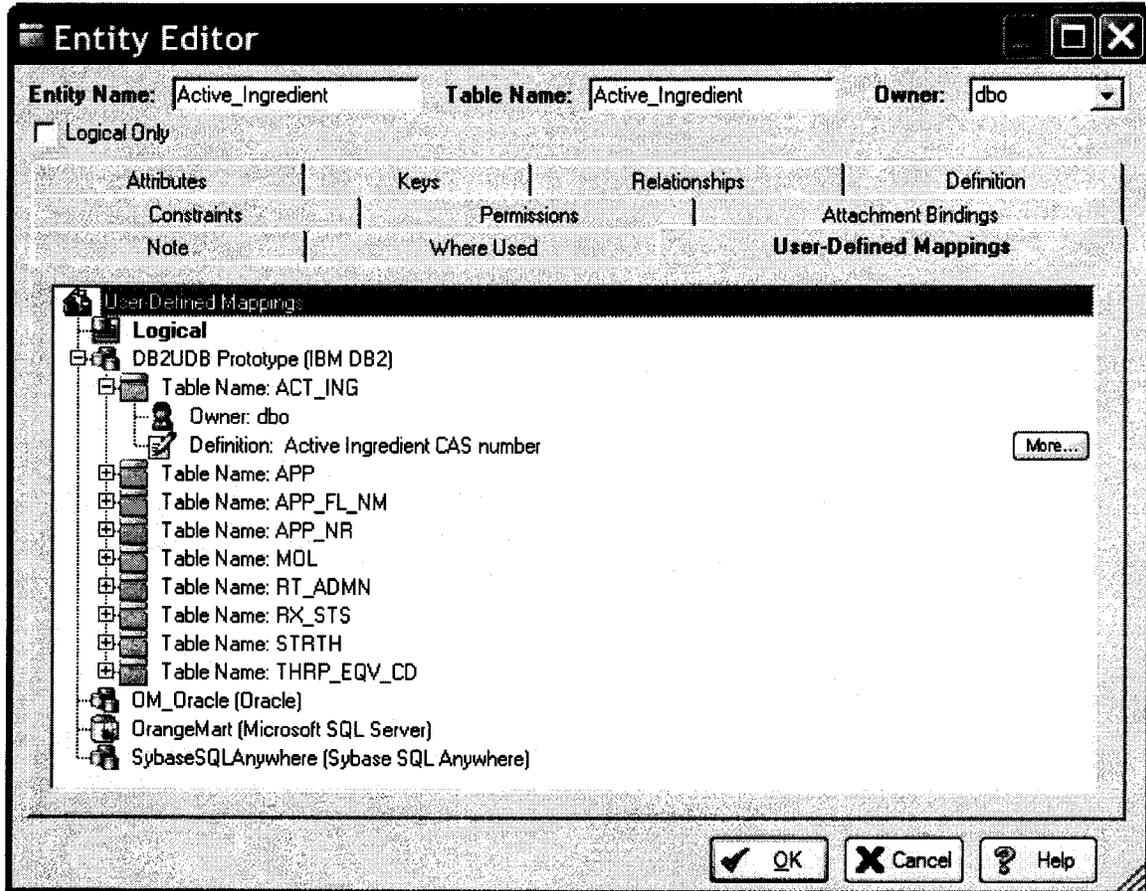
#### **Domain Hierarchy and Inheritance**

Domains can be created hierarchically so specific properties are inherited from the parent domains. You then use child domains can to manage common data elements across physical environments. The domain system allows domains of domains, e.g. “phone” and “international phone.”

### User Defined-Mapping

User-defined mappings (UDMs) relate any objects that you deem to be of the same type across models. There are no restrictions on what you map together.

In the Table Editor invoked from the Physical Model below, a UDM exists for Active\_Ingredient, Applicant, Applicant\_Full\_Name, and Therapeutic\_Equiv\_Code. You might use the Note Tab to describe the relation as, "This UDM binds applicants and their drug profiles to alert staff to possible drug interactions."



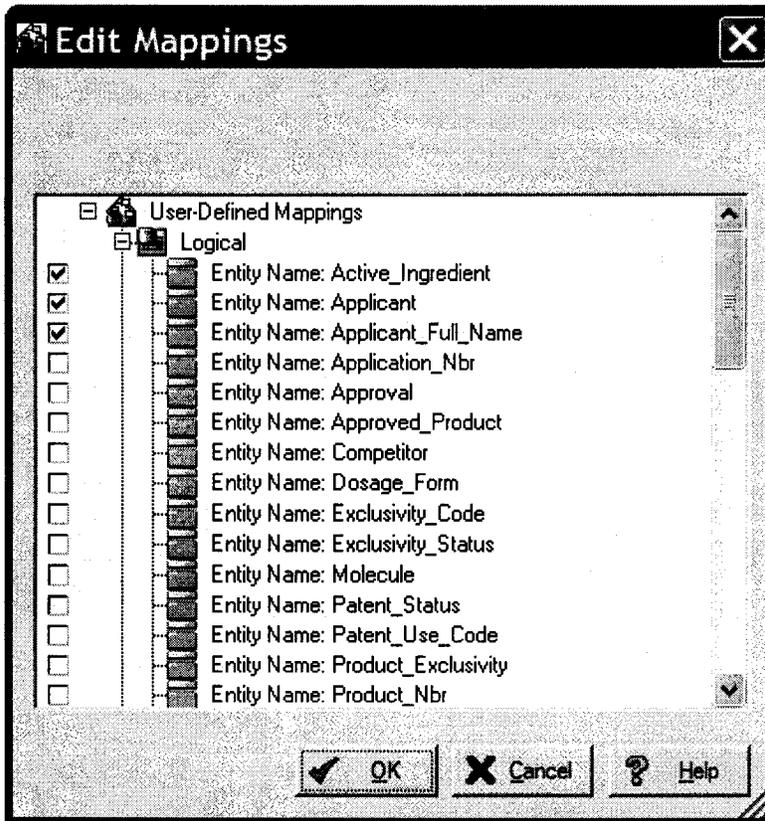
*Displaying non-canonic data mappings*

To show the maps:

1. Select Table/Entity Editor > "User-Defined Mappings" tab.

To edit the maps:

1. Right-click on the Entity/Table node in the Explorer pane.
2. Check the items to be mapped. You'll see:



Selecting User-Defined mappings

### Add New Model Updates

You can now import and compare models from DT/Studio to models in ER/Studio. Your sources are importable from \*.dm1 files, \*.dt1 files in addition to a database, an \*.erx (saved from a reverse-engineered database) or SQL file.

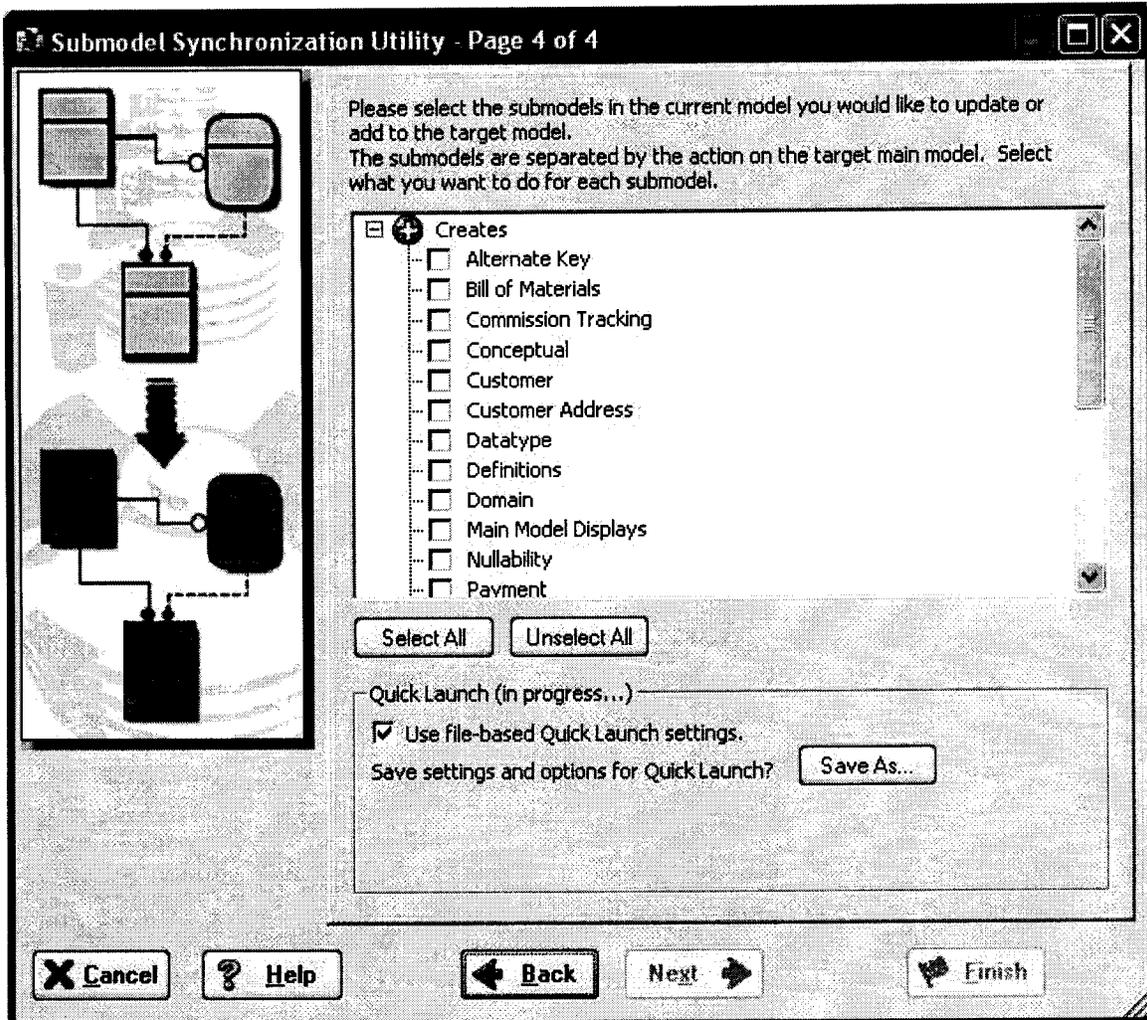
The "Add New Physical Model" Wizard supports all this and an ER/Studio model will represent any point along the way.

### Submodel Synchronization

This utility enhances your ability to manage submodels across disparate models. You can add, remove and update submodels in logical and physical models and across a logical and physical model.

Example 1. You have existing logical and physical models in a \*.dm1 file, each with numerous submodels. The physical model represents the current development benchmark environment. You use the "Add New Physical Model" to add a physical model of the "test" environment. This "test" environment is close to, but not exactly matching, the existing physical model that is the development benchmark environment. You might now add or transfer the submodel from the development model to the test model. The same case would apply across disparate \*.dm1 files.

Example 2. You have a logical and physical model within the same \*.dm1. For reporting purposes, the same submodels are used in the logical and the physical models. You make substantial changes, adding and removing objects or adding new submodels for new projects. Your users now want to synchronize or promote these changes to the physical model: you use the Submodel Synchronization Utility.



*Options while synchronizing disparate submodels with a target model*

To launch the Submodel Synchronization Utility:

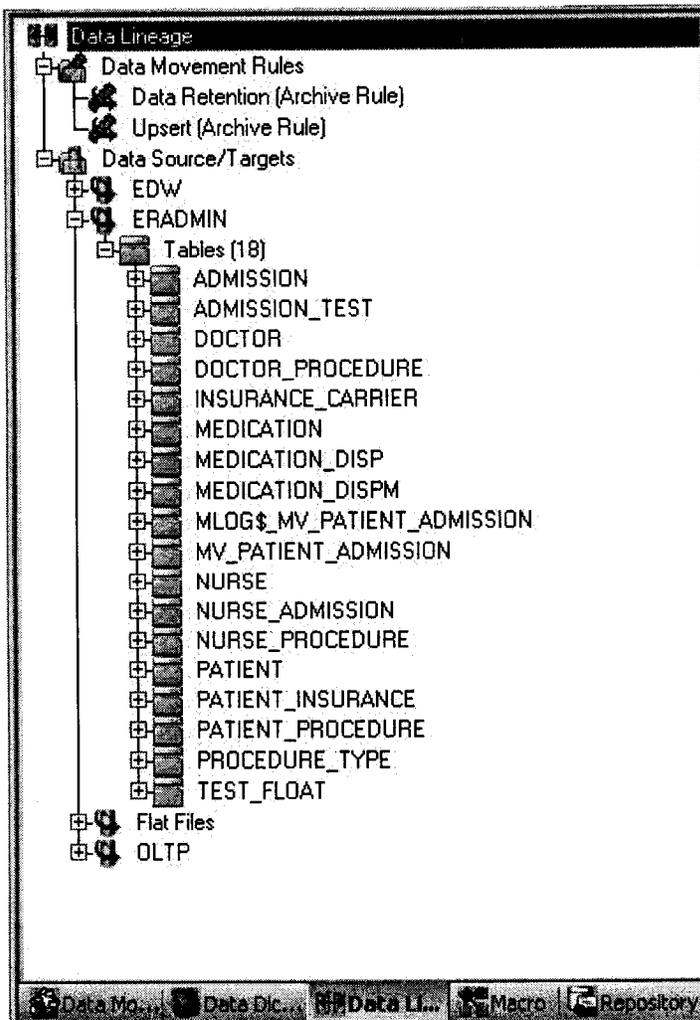
1. From the Menu, Select Model > Submodel Synch,

Or

1. Right-Click on any Entity /Table in the Diagram Explorer.

### Data Warehousing Updates

Data Architects must often document the preliminary requirements for data movement throughout their organization. The process of moving data from point A to point B, and through any intermediate steps, is referred to as "Extraction, Transformation and Load" (ETL). Points A and B can be anything from flat files, databases, XML, Access or Excel, and others. New source and target data movement interfaces help data architects communicate ETL plans to developers before coding their projects. ER/Studio gives you the Data Lineage and Data Movement Rules utilities described below for the job.



*Data movement across systems*

### Data Lineage

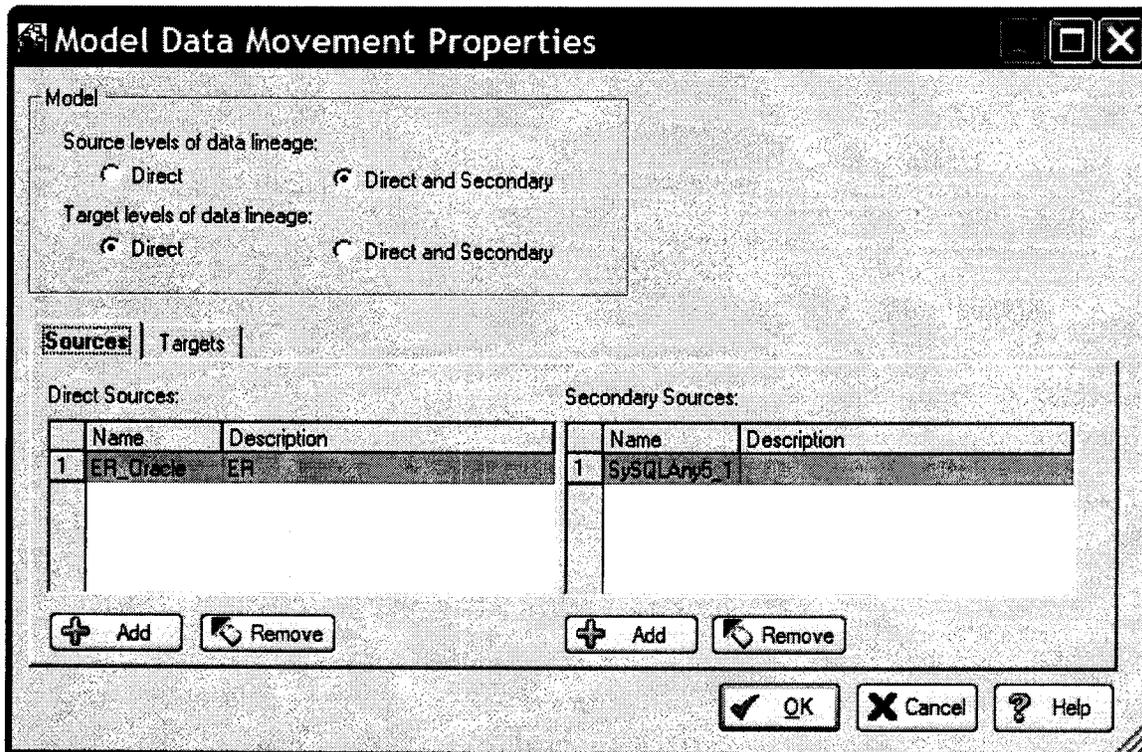
Data lineage documents the movement of data between systems. This is sometimes referred to as “source and target” mapping. For example, your organization’s data warehouse may have data fed in from multiple sources such as CRM, Payroll, General Ledger, Accounting, or Product/Inventory system. The data warehouse will likely need on-line data marts receiving data from one of those systems to produce reports for Sales Executives, HR Executives or marketing teams who produce performance reports about of various aspects of your business.

Data Lineage Documentation workflow generally goes as follows:

1. Navigate to the Data Lineage Tab in the explorer tree.
2. Import or create Source/Target models by right-clicking on the Source/Target Models node. If the source/target physical model already exists in ER/Studio, you’ll name it as such here first.
3. Create Data Movement rules by right-clicking on the Data Movement Rules node. Rules are then bound in the Table Editor’s Data Lineage Tab.
4. Right-click on a particular physical model to add data movement and set up mapping.

### Data Movement Properties

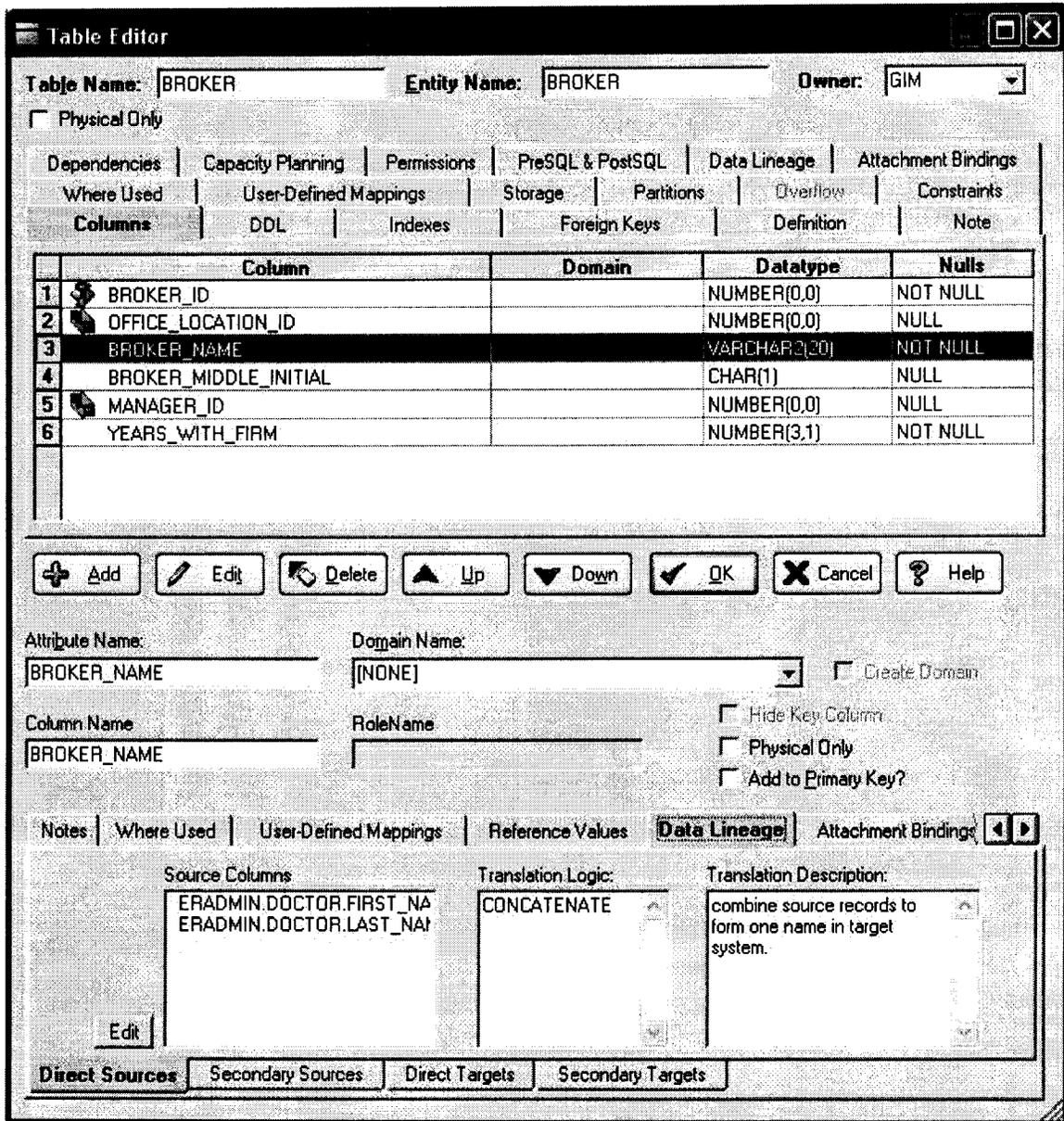
This is where you initiate management for multiple tiers of data movement including direct and secondary mappings. For an existing physical model, you'll need to first create it as a source/target as explained above. Then you'll edit table and column mappings in the diagram explorer physical model.



*Multiple-tier data movement between platforms*

To move data by importing a model or from an existing and begin mapping:

1. Right-click on the top-level node of a physical model and select "Data Movement Properties..."
2. Select the Add button to register source/target models as direct or secondary sources and targets. How the source/target is registered to a physical model determines how its columns can be mapped to the physical model. For example, a source/target registered as a direct source will show up in the column mappings under the direct source tab
3. Double-click on a table to invoke the Table Editor and Select the Data Lineage tab to link Rules.
4. Double-click on a column to expand the editor, then select the Data Lineage tab.
5. Select the Edit button to map columns by defining translation logic.



Column-Mapping for data lineage

### Source and Target Information

Data Architects now have the ability to specify the source or target of data down to the column-level. Along with the metadata that defines the source and target mapping, you can define transformation logic for how the data is manipulated along the way. Source or target metadata can be imported and then mapped to your existing models. You can support multiple tiers of data movement for a given model including direct and secondary mappings.

To use Data Source/Target features:

1. Select the Data Lineage Tab in the explorer pane.
2. Right-click on the Data Source/Target node and select "New Source/Target."

- For an existing ER/Studio physical model, use a Name that corresponds in some way to the physical model and database, then select the corresponding DBMS Type and Version. You must do it before you set "Data Movement Properties..."

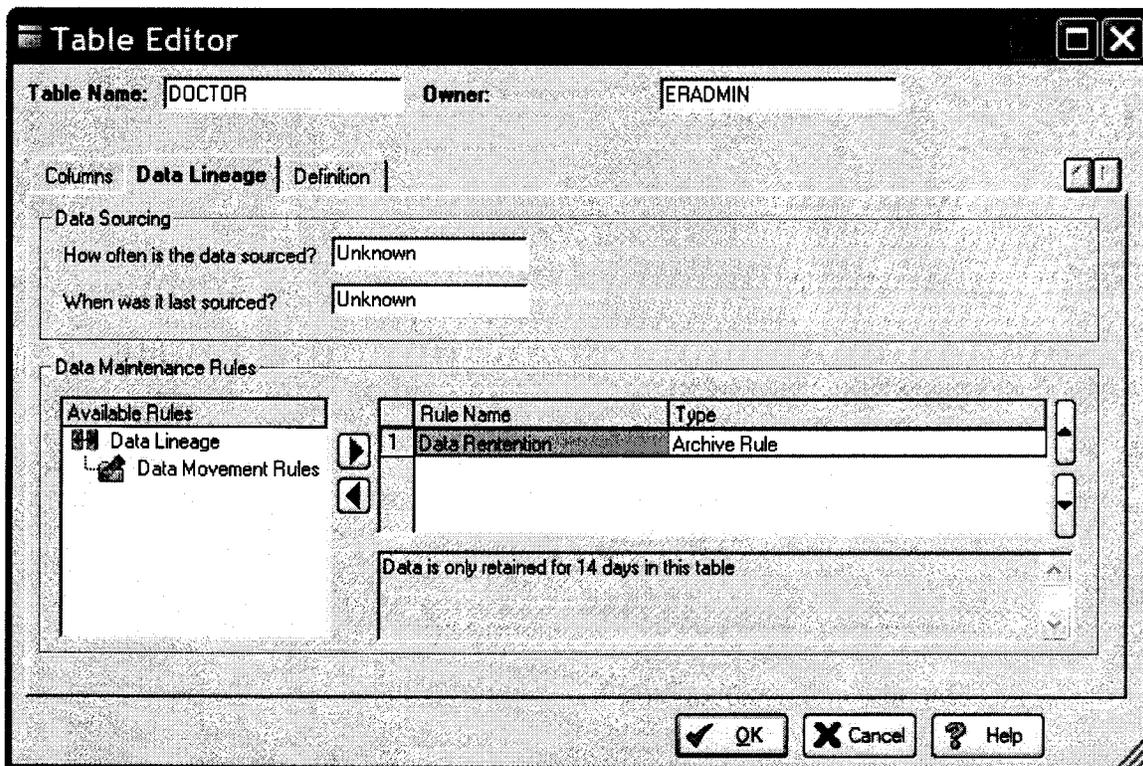
### Data Movement Rules

Using the Data Movement Rule utility, you can define rules for data loading, updating archiving and purging among the components of your data warehouse. You can document the exact requirements for data movement.

To add or edit Data Movement Rules:

- Select the Data Lineage Tab in the explorer pane.
- Right click on the Data Movement Rules node and select "New Data Movement Rule."

The rule can then be added to a table using the Table editor as described below.



*Adding Data Movement Rules at the Table/Column level*

To add rules at the table and column level as above:

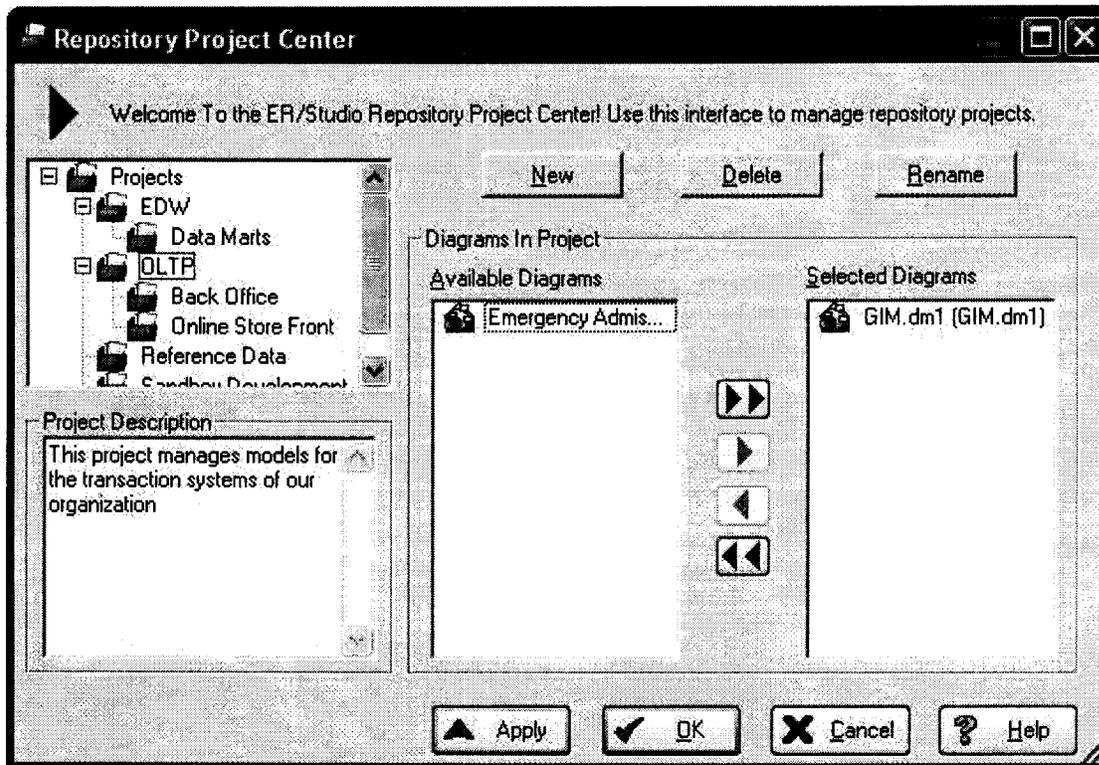
- Select the Data Lineage Tab in the explorer pane.
- Double-click on a table and select a column.
- Select the Data Lineage Tab and add or remove Data Movement Rules. To display the description, click on the Rule Name.

## Repository Model Management Updates

The Repository includes enhanced version-control functions and has automated much of traditional configuration management work with Branch, Merge and logical Nesting Tools.

## Nested Projects

ER/Studio 7.0 lets you nest the structure of your projects. Nested hierarchies allow high levels of organization and more advanced repository security implementation. Projects must first be added to the Repository before they will be available for nesting management.

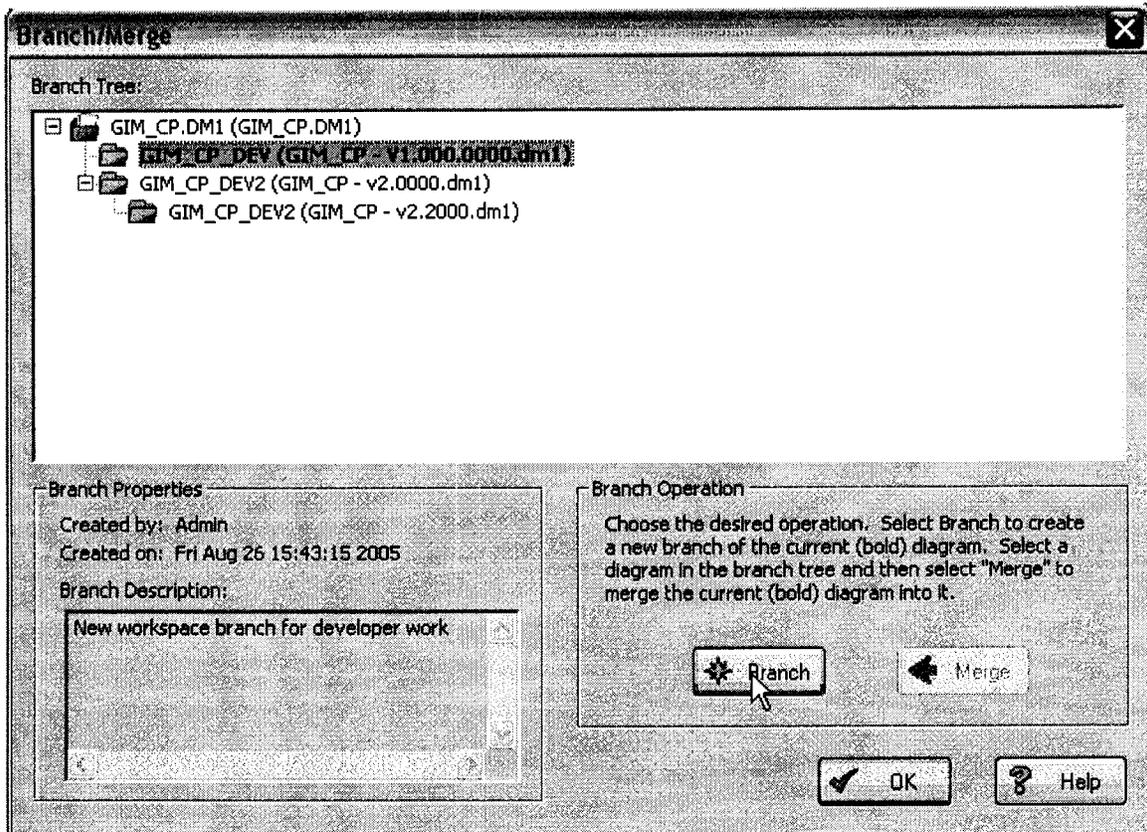


To add nested submodels in Repository:

1. Log in to the Repository.
2. From the main menu select Repository>Project Center.

## Branch and Merge

Models and submodels can be synchronized across models reducing time to re-work complex diagrams. For example, parallel working versions of a diagram let team members work on separate copies of the diagram. One version may be reserved for maintenance of the current version of a model while a new version can be created to start on new features that require a more extensive re-architecture.



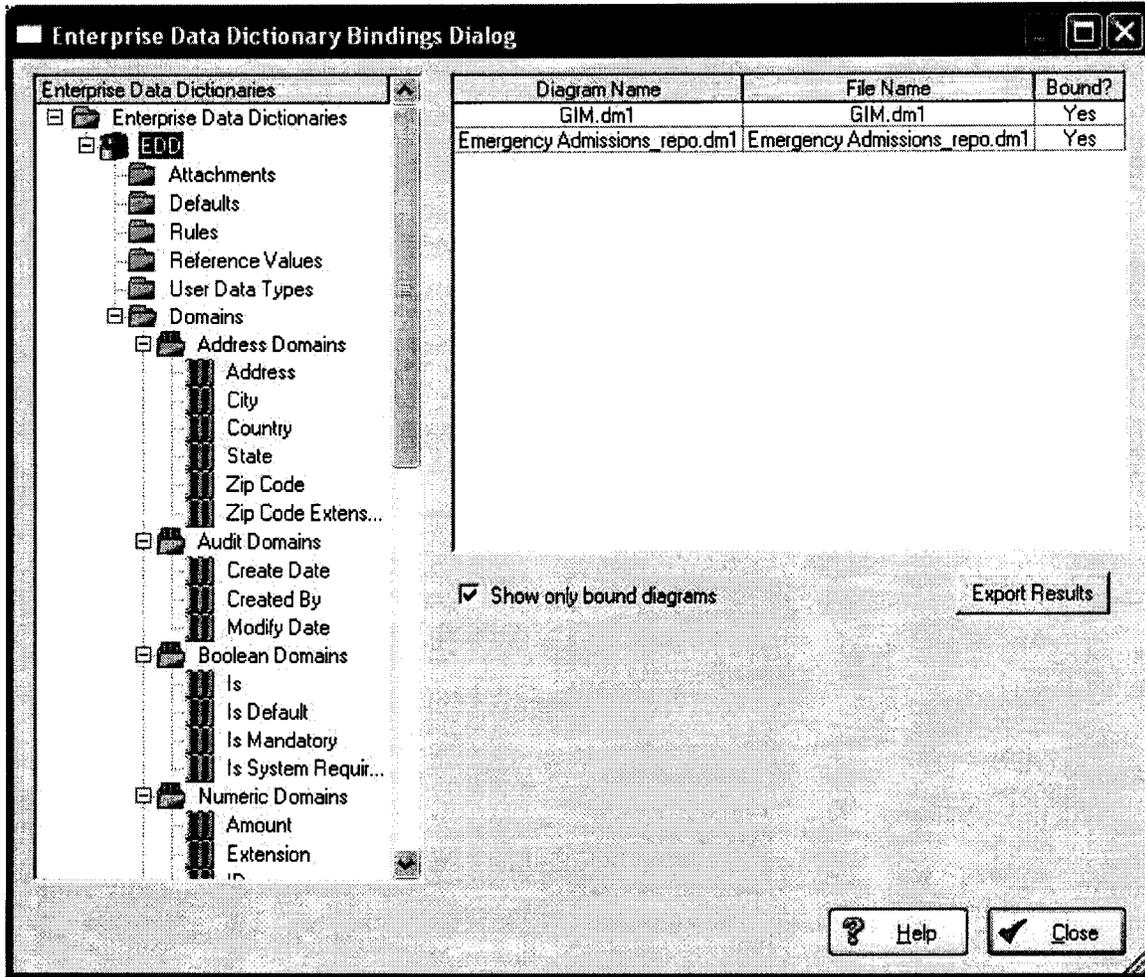
*Repo Branch/Merge Utility*

To launch the Branch and Merge Utility:

1. From the main menu Select: Repository > Diagrams > Branch/Merge Diagram.

### Enterprise Data Dictionary

The enterprise dictionary-binding dialog has been enhanced and now includes attachments and reference values. The bindings are presented in a grid format and can be exported to \*.csv files for reports.



Enhanced EDD Binding Dialog

## Additional Resources

### Licensing Your Embarcadero Technologies Product

All Embarcadero Technologies products include a 14-day trial period. To continue using the product without interruption, we recommend that you license it as soon as possible. To license your product, use the License Request Wizard found in the Help menu of your respective product. If you have not yet purchased your Embarcadero Technologies product, contact [sales@embarcadero.com](mailto:sales@embarcadero.com), or [uk.sales@embarcadero.com](mailto:uk.sales@embarcadero.com) for sales in the EMEA region.

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- [Online Demos](#)
- [Technical Papers](#)
- [Discussion Groups](#)
- [Knowledge Base](#)
- [FAQ](#)

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Friday, July 30, 2010

**we make data work.**

What's all the buzz about? Check out Embarcadero's recent coverage on the ABC BusinessNOW report for a business overview.

Next-generation testing. Extreme Test's collaborative approach delivers quick and accurate test results. View our Flash™ demo.



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**New Release: Embarcadero DT/Studio 2.2**  
With over 20 new and improved enhancements, DT/Studio 2.2 offers a model-driven approach to data integration, enabling users to implement integration tasks at unparalleled speeds. Sophisticated yet easy-to-use, DT/Studio is the industry's most flexible, scalable and affordable enterprise data integration solution.

June 20 - 24, 2004  
OMG Technical Meeting  
Orlando, FL

June 23 - July 1, 2004  
2004 JavaOne Conference  
San Francisco, CA

ER/Studio 8.3 represents a significant value-add in how we see and leverage our data models by giving us much greater interplay between our business intelligence applications, metadata repositories, and other major ETL environments.  
*John Proff, Oracle DBA*

June 14, 2004  
Embarcadero Technologies Strengthens Management Team

June 7, 2004  
Embarcadero Technologies Announces Annual Shareholders Meeting



Products Home | Change Manager | DBArtisan | DSAuditor | Describe | DT/Studio | ER/Studio | Performance Center | Rapid SQL | More Products | Product Reviews

## Frequently Asked Questions

**Q: How does ER/Studio help me manage and control growth in data?**

**A:** ER/Studio offers model-driven analysis of database objects with a clear separation between logical and physical layers. This allows a clear representation of data structures regardless of the implementation-specific optimizations on the physical layer. Leveraging the separation of logical and physical models, redundant data can be consolidated. Users can also leverage ER/Studio's reusability features and collaboration support to effectively work in teams and ensure consistency across their environment.

**Q: Can I leverage ER/Studio to improve data quality?**

**A:** Yes. ER/Studio allows users to create reusable objects to foster standardization throughout the infrastructure. This ensures that data is consistent across different systems. In addition, ER/Studio provides a view of the "as is" data so users can look at data patterns. Users can leverage this knowledge to standardize data, ease integration between systems, and resolve potential data quality issues.

**Q: How would an ER/Studio modeling solution help increase user productivity?**

**A:** ER/Studio provides an intuitive and easy-to-use interface that significantly reduces the time needed for users to become productive. ER/Studio users benefit from significant productivity gains through the advanced reusability features, its ability to import and export metadata from different systems, and the excellent graphic capabilities of the product.

**Q: Does ER/Studio provide any benefits to non-users of the product (i.e., executive management and business managers)?**

**A:** Yes. ER/Studio can facilitate communication with non-users of the product by publishing data models and metadata directly to a corporate Intranet or Web site for review by executive management or business managers. Users can also access metadata through the ER/Studio Repository. This data can be repurposed for use in other enterprise systems and reports.

**Q: How does ER/Studio support the use/reuse of metadata throughout the enterprise?**

**A:** ER/Studio complies with the leading industry standards for metadata and modeling notations. This enables reusability of the metadata as well as integration with different applications. ER/Studio models can be imported and exported in standards-based formats for reuse in such applications as BPM, UML, business analytics, and integration products. ER/Studio metadata is also reused in Embarcadero DT/Studio and Embarcadero Describe.

Product Overview

Data Sheet

Data Sheet (PDF)

Quickfacts

FAQs

Documentation

Online Demo

Macros

### Describe

Design, document and maintain enterprise applications written in Java, C++, C#, and VB for better code quality and shorter time to market.

### DT/Studio

Achieve new levels of usability, scalability, and flexibility by combining visual data modeling with a visual data flow designer and an extensible Java-based ETL engine with DT/Studio.



**EMBARCADERO  
TECHNOLOGIES.**  
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# ● ER/Studio

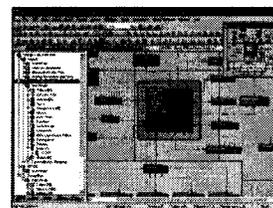
## Enterprise Data Modeling

ER/Studio®, a model-driven data architecture and database design solution, helps companies discover, document, and reuse data assets. With round-trip database support, data architects have the power to thoroughly analyze existing data sources as well as design and implement high quality databases that reflect business needs. The highly-readable visual format enhances communication across job functions, from business analysts to application developers. ER/Studio Enterprise also enables team and enterprise collaboration with its repository.

- Enhance visibility into your existing data assets
- Effectively communicate models across the enterprise
- Improve data consistency
- Trace data origins and whereabouts to enhance data integration and accuracy

### ENHANCE VISIBILITY INTO YOUR EXISTING DATA ASSETS

As data volumes grow and environments become more complex corporations find it increasingly difficult to leverage their information. ER/Studio provides an easy-to-use visual medium to document, understand, and publish information about data assets so that they can be harnessed to support business objectives. Powerful reverse engineering of industry-leading database systems allow a data modeler to compare and consolidate common data structures without creating unnecessary duplication. Using industry standard notations, data modelers can create an information hub by importing, analyzing, and repurposing metadata from data sources such as business intelligence applications, ETL environments, XML documents, and other modeling solutions.



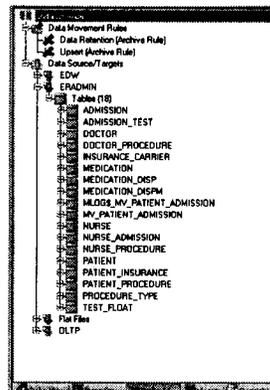
An easy-to-use visual medium to document, design, and communicate data assets

### IMPROVE DATA CONSISTENCY

When businesses rely on information to make key decisions, the underlying data needs to be accurate and relevant. Knowledge workers can spend significant amounts of time looking through data sources, researching what information means, and find that it is not being used appropriately. ER/Studio helps data architects define and reuse common data elements and modeling components across projects to establish standards in their modeling practices. By enforcing standards, and being able to analyze and document data elements, corporations can better understand and utilize their data, reduce redundancy, and build consistency.

### EFFECTIVELY COMMUNICATE MODELS ACROSS THE ENTERPRISE

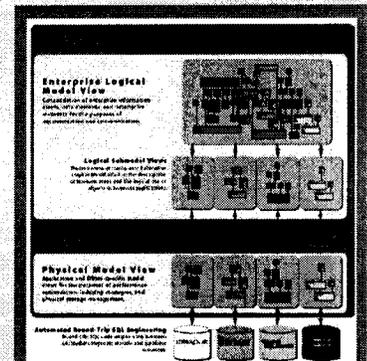
ER/Studio brings clarity to models and to complex business rule enforcement. The multilevel design layers allow for the accurate visualization of data, which promotes communication between business and technical users. Streamlined navigational aids, diagram layout utilities, and powerful report publishing functions simplify the communication of designs within and beyond the data modeling group. ER/Studio makes it easier to understand and communicate the current state of data throughout the enterprise, maintain corporate standards, and encourage appropriate data usage. Bringing all metadata into a central repository helps the transfer of knowledge among stakeholders, and allows users to easily see relationships and business rules that relate to their data.



Documenting source/target mapping and sourcing rules helps data professionals trace data movement across systems.

### TRACE DATA ORIGINS AND WHEREABOUTS TO ENHANCE DATA INTEGRATION AND ACCURACY

With a clear understanding of where data originated and where it is used, organizations can be assured that they know what their data actually means and how it can best be utilized. ER/Studio's data lineage functionality provides data professionals with the ability to document how data flows through the organization. Attachments also allow organizations to append specific information to their models to enhance documentation.



### Report Solutions

### ER/Studio

ER/Studio provides a visual medium to document, design, and communicate data assets. Powerful reverse engineering of industry-leading database systems allow a data modeler to compare and consolidate common data structures without creating unnecessary duplication. Using industry standard notations, data modelers can create an information hub by importing, analyzing, and repurposing metadata from data sources such as business intelligence applications, ETL environments, XML documents, and other modeling solutions.

An easy-to-use visual medium to document, design, and communicate data assets

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### EFFECTIVELY COMMUNICATE MODELS ACROSS THE ENTERPRISE

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### TRACE DATA ORIGINS AND WHEREABOUTS TO ENHANCE DATA INTEGRATION AND ACCURACY

With a clear understanding of where data originated and where it is used, organizations can be assured that they know what their data actually means and how it can best be utilized. ER/Studio's data lineage functionality provides data professionals with the ability to document how data flows through the organization. Attachments also allow organizations to append specific information to their models to enhance documentation.

Highly Productive Model-driven Design Environment	
Multilevel Design Capabilities	Allows many physical designs from a core logical architecture
Automated Transformation	Streamlines the derivation of a physical design from a logical one and checks for normalization and compliance with the target database platform
Denormalization Mapping	Allows physical database designers to optimize a logical design while maintaining ties to the logical artifact.
Extensible Automation Interface	Automates tedious, routine tasks such as coloring tables, enforcing and applying naming standards, globally updating storage parameters and integrating with other desktop applications such as Microsoft Excel, Word, or Access
Industry Standard Design Notations	Supports IDEF1X, Information Engineering (IE or "Crow's Foot") as well as Filtered IE which hides all foreign keys
Complete Database Lifecycle Support	
Reverse-engineering	Constructs a graphical model from an existing database or schema
Forward-engineering	Generates source code for some database designs
Database Modification	Allows design changes made to the data model to be applied directly to a database by formulating intelligent alteration code
Enterprise Model Management	
Advanced Compare and Merge	Enables advanced, bidirectional comparisons, and merges of model and database structures such as logical to physical, physical to physical, physical to database, etc.
Submodel Management	Allows creation of multileveled submodels, merging of submodel properties across existing models, and synchronization submodel hierarchies across disparate models
Metadata Integration	Imports and exports metadata from a variety of sources including BI platforms, UML and data modeling solutions, XML schemas, and CWM (common warehouse metamodel) to create a metadata hub
Data Dictionary Standardization, Enforcement and Reuse	Helps define and enforce standard corporate data elements, and other objects across any project. Facilitates communication and support of standards across complex models with domain inheritance, reusable objects, and automatic updates
"Where Used" Analysis with User-defined Mapping	Displays the mappings between logical entities and attributes and their implementation across physical designs. Allows data architects to customize the mapping of logical and physical artifacts for informational purposes
Repository for Team-centric Collaborative Modeling	Provides organizations with scalable, server-side, model management that includes model and object version management, security management, and the ability to branch and merge models. The repository is available in the Enterprise edition
Enterprise-caliber Communication Capabilities	
Advanced Graphics and Layout	Automatically creates highly readable, highly navigable diagrams
Automated Web Publishing	Generates HTML reports of complete diagrams that can easily be shared across an intranet
Presentation-Quality RTF (Microsoft® Word) Reports	Delivers completely customizable RTF report output suitable for professional presentations or publications
XML Schema and DTD Output	Offers www.w3c.org XSD (Schema) and DTD output of its data models to accommodate customer-specific extensions
ER/Studio Viewer	Provides anyone outside the data modeling team with an interactive environment for viewing ER/Studio data models.
Data Warehouse and Integration Support	
Data Lineage Documenting	Documents source/target mapping and sourcing rules for data movement across systems
Dimensional Modeling	Leverages complex star and snowflake schema designs and supports the importation of its rich dimensional metadata from variety of BI and data warehouse platforms
Data Model Export	Supports exporting data warehouse designs to a variety of platforms and development solutions
Quality Database Designs	
Automatic Foreign Key Migration	Maintains foreign keys to ensure referential integrity in designs.
Validation Wizards	Incorporates wizards to promote normalization of logical diagrams and ensure that physical designs comply with the syntax and naming rules of the target diagram
Auto-documentation	Allows the addition of definitions and notes efficiently from the visual editors and constructs verb phrase sentences to clarify the purpose of relationships
Security/Permissions Modeling	Enables users, roles, and permissions modeling at the logical and physical level
Capacity Planning	Manages row count and growth rates for tables and can calculate future storage requirements and forecasts future needs

<p><b>DBMS Support</b></p> <ul style="list-style-type: none"> <li>• Hitachi® HiRDB</li> <li>• IBM® DB2® Universal Database® 5.x, 6.x, 7.x &amp; 8.x for LUW, 5.x, 6.x, 7.x, 8.x for z/OS® &amp; iSeries V4R5 and V5R2</li> <li>• Informix® OnLine and SE</li> <li>• Informix 9.x dynamic server</li> <li>• InterBase™ 4</li> <li>• Microsoft® Access 2.0, 95, 97 &amp; 2000</li> <li>• Microsoft SQL Server 6.5, 7, 2000 &amp; 2005</li> <li>• Microsoft Visual FoxPro® 3, 4, 5</li> <li>• MySQL® 3.x, 4.x</li> <li>• NCR Teradata V2R4, V2R5</li> <li>• Oracle® 7.3.x, 8.x, 9i, 10g</li> <li>• Sybase® Adaptive Server Enterprise (ASE) 11.9.2, 12.x &amp; 12.5</li> <li>• Sybase Adaptive Server Anywhere (ASA) 5, 6, 7, 8, 9</li> <li>• Sybase Watcom™ SQL</li> </ul>	<p><b>System Requirements</b></p> <ul style="list-style-type: none"> <li>• 100 MB of hard disk storage</li> <li>• 512 MB of RAM recommended (1 GB recommended for large diagrams: i.e., 1000 + entity range)</li> <li>• 1024 _ 768 Display Resolution recommended</li> <li>• Windows® NT, Windows 98, Windows 2000, Windows XP &amp; Windows 2003 Server</li> <li>• Native Connections: Oracle, DB2 UDB (LUW, iSeries and z/OS), SQL Server and Sybase client libraries required</li> <li>• ODBC Connections: For databases ER/Studio supports via ODBC, a valid ODBC driver is required</li> </ul>
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[COMPANY](#)   [SOLUTIONS](#)   [PRODUCTS](#)   [SERVICES](#)   [NEWS & EVENTS](#)

## PRODUCT OVERVIEW

### DATABASE DESIGN

[ER/Studio](#)  
[EA/Studio](#)  
[DT/Studio](#)  
[Schema Examiner](#)

### DATABASE DEVELOPMENT

[Rapid SQL](#)  
[PowerSQL](#)  
[DB Optimizer](#)

### DATABASE MANAGEMENT

[DBArtisan](#)  
[Change Manager](#)  
[Performance Center](#)  
[DSAuditor](#)

### SOLUTION PACKS

[Standard Edition](#)  
[Administration Edition](#)  
[Development Edition](#)

### FREE TRIALS

### UPGRADE CENTER

### BETA PROGRAMS

## PARTNERS



## ER/Studio®

Data modeling tool for designing and understanding your databases

7.6 now offers XML Schema generation from logical and physical models, enhanced conversion capabilities when moving between logical and physical models, and stronger dimensional modeling

- True separation of logical and physical models
- Ease of use
- Diagram layout engines and navigation
- Flexible architecture

Embarcadero ER/Studio, an industry-leading data modeling tool, helps companies discover, document, and re-use data assets. With round-trip database support, data architects have the power to easily reverse-engineer, analyze, and optimize existing databases. Productivity gains and enforcement of organizational standards can be achieved with ER/Studio's strong collaboration capabilities.

#### ER/Studio offers:

- Model-driven design environment
- Complete database lifecycle support
- Enterprise model management
- Enterprise communication capabilities
- Data warehouse and integration support
- Quality database designs

#### Product Editions

**ER/Studio Standard** - Provides complete environment for analyzing, designing, creating, and maintaining database applications.

**ER/Studio Enterprise** - Includes the server-side **ER/Studio Repository** for improved teamwork and enterprise collaboration and Embarcadero's business process and conceptual modeling tool, **EA/Studio**.

#### Related Products:

**ER/Studio Viewer** - View, navigate and print ER/Studio models in a view-only environment. ER/Studio Viewer features the same sophisticated and advanced viewing, navigation and printing functionality

**Universal Data Models** - Standard and Industry data model templates for ER/Studio that reduce the development time of database-related projects by an average of 60 percent, as well as improve the quality of existing and new data models.

**MetaWizard** - Integrate metadata across modeling tools, business intelligence, ETL platforms and industry-standard exchange formats (XMI, XML and XSD).

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## PRODUCT OVERVIEW

### DATABASE DESIGN

[ER/Studio](#)[EA/Studio](#)[DT/Studio](#)[Schema Examiner](#)

### DATABASE DEVELOPMENT

[Rapid SQL](#)[Change Manager](#)[SQL Debugger](#)[SQL Profiler](#)

### DATABASE MANAGEMENT

[DBArtisan](#)[Performance Center](#)[DSAuditor](#)

### SOLUTION PACKS

[Standard Edition](#)[Administration Edition](#)[Development Edition](#)

### FREE TRIALS

### UPGRADE CENTER

### BETA PROGRAMS



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#### ER/Studio offers:

- Model-driven design environment
- Complete database lifecycle support
- Enterprise model management
- Enterprise communication capabilities
- Data warehouse and integration support
- Quality database designs

According to **Gartner Dataquest**, Embarcadero is the fastest growing worldwide database design vendor in 2006 based on total software revenue. Learn how the award-winning ER/Studio has been deployed to discover, document, and reuse data assets in our customer **success stories** and **testimonials**.

View, navigate and print ER/Studio models in a view-only environment. **ER/Studio Viewer** features the same sophisticated and advanced viewing, navigation and printing functionality

**Universal Data Models** reduce the development time of database-related projects by an average of 60 percent, as well as improve the quality of existing and new data models.

**MetaWizard** allows ER/Studio to integrate with more than seventy other applications by sharing meta-data through an import-export capability.

Validate and fine-tune database schema with comprehensive diagnostics and reporting provided by **Schema Examiner**.

Allow business users and data architects to model business processes then relate those processes to data using **EA/Studio**.

#### Revision Information:

# TurboRuby™

The Fastest Way to Develop Ruby Applications



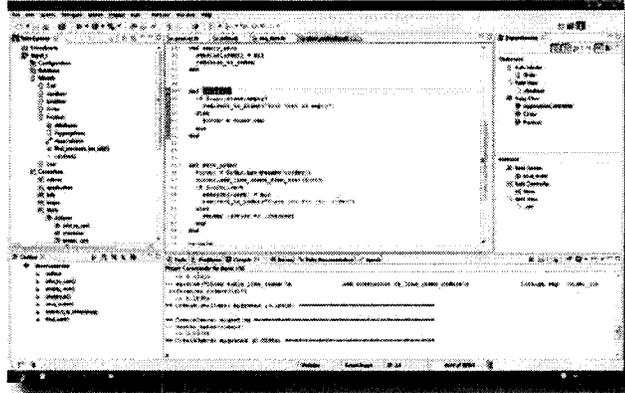
EMBARCADERO  
TECHNOLOGIES



TurboRuby® is the intuitive integrated development environment (IDE) that delivers the power you need to dramatically accelerate non-Rails Ruby development.

TurboRuby is innovative and powerful with features built from the ground up for Ruby development including a Dependencies View that lets you see all project interdependencies. Intelligent Code Completion lets you quickly perform method completion, parameter completion, and syntax checking. Its Commanders provide a quick interface to all the power of a Ruby command line for running code generators. A high-performance integrated debugger and other IDE productivity features help your developers streamline Ruby development and create powerful applications. And the new R Optimizer provides advanced Ruby CPU Profiling, with options for filtering the type and amount of data collected and/or displayed across views.

- Write applications faster, with fewer keystrokes using intelligent Code Completion
- Switch between the command line and IDE with Commanders
- Simplify application design



The Project Explorer helps to keep track of all your Project files

## WRITE APPLICATIONS FASTER, WITH FEWER KEYSTROKES USING INTELLIGENT CODE COMPLETION

TurboRuby's code completion includes several powerful, integrated features for method completion, parameter completion and syntax checking. Write rich, clean code with greater accuracy and fewer keystrokes and without the need to remember fine points such as object types, methods, and method signatures. TurboRuby predicts likely expectations based on conventions and semantics and is able to understand the context of code that's being written. Rather than simply produce a pop-up list of hundreds of choices, TurboRuby shows the right ones. TurboRuby's code completion is so advanced that even methods that are created dynamically at runtime are included. Your developers can more quickly write powerful applications.

## SWITCH BETWEEN THE COMMAND LINE AND IDE WITH COMMANDERS

Commanders help you merge the power of a command line with the ease-of-use and productivity of the IDE. You can dynamically switch between typing on command lines and the IDE's tools which are integrated right into the command line. When you add a model or view, the output from commands is immediately reflected throughout the IDE. Command output is also hyperlinked, so that clicking on any generated file or folder will open that in the IDE. TurboRuby's Code Navigation assists rapid and efficient movement of application structures for even more streamlined application development.

## SIMPLIFY APPLICATION DESIGN

TurboRuby provides technology made specifically for Rails that helps developers improve and simplify application design. Features like Problem Detection and Correction which detects common Ruby coding errors as you save changes and automatically corrects them with the "Quick Fix" option.

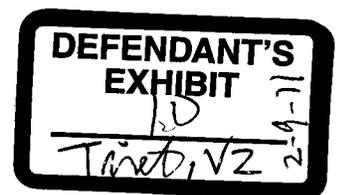
## Related Products

**3rdRail™**  
The fastest way to develop Ruby on Rails web applications.

**Delphi Prism™**  
Next generation Delphi development solution for .NET and Mono.

**InterBase® SMP**  
The powerful database for embedded and enterprise applications.

**Embarcadero® All-Access™**  
Instant access to the languages, tools, and technologies to design, build, and run your software applications and database systems.



Features	Description
<b>TurboRuby</b>	
<b>Comprehensive Ruby Development Solution</b>	
Complete Ruby Runtime Environment	Includes Turbo Ruby Developer Kit (TurboRDK), a complete, turnkey Ruby runtime environment that provides Ruby VM, and hundreds of Gems; supports a consistent development environment for Mac OS/X, Windows, and Linux
Gems Manager	Supports easy installation and management of Ruby Gems
<b>High Productivity Integrated Development Environment (IDE)</b>	
Code Navigation	Assists rapid and efficient traversal of application structures; allows developers to only view the area of their code relevant to a given selection
Problem Detection and Correction	Detects common Ruby coding errors as you save changes; marks and explains them in the Problems view; and, when possible, automatically corrects them via the "Quick Fix" option found within the context menu of the problem description (when automatic correction is not feasible, more general solution suggestions are shown)
Commanders	Provides a quick interface to all of the power of the Ruby command line for running code generators and performing other tasks, and integrates it into the IDE
R Optimizer	Provides advanced Ruby CPU Profiling, including full support for Rails projects; gives options for filtering the type and amount of data that is collected and/or displayed across multiple view styles
<b>Debugging</b>	
Integrated High Performance Debugger	Supports both Ruby and Rails ERB debugging (Embedded Ruby, RHTML)
Visual Test Runner	Provides one-click run, debug, or profile of any individual or collection of tests/specifications created using Test: Unit, RSpec, and/or Shoulda; presents a visual display of progress and results, including smart display of expected/actual comparisons and/or stack traces

System Requirements
<ul style="list-style-type: none"> <li>• 512 MB RAM minimum (1 GB for Microsoft® Windows Vista™)</li> <li>• 700 MB hard disk space minimum</li> <li>• Windows: Intel® Pentium® III/M 1.4 GHz, or Pentium IV 1.4 GHz minimum</li> <li>• DVD-ROM drive (for installation via DVD, electronic download option also available)</li> <li>• High-resolution monitor (1024x768/256 colors)</li> <li>• Ruby 1.8.5 or higher</li> <li>• Rails 1.2.x or higher or</li> <li>• Rails 2.0.x or higher</li> <li>• Microsoft® Windows Vista™</li> <li>• Microsoft® Windows XP</li> <li>• Mac OS® X 10.5</li> <li>• Ubuntu Linux 8.04</li> </ul>

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# Embarcadero RAD Studio XE

Complete solution for Windows®, .NET, PHP and Web application development

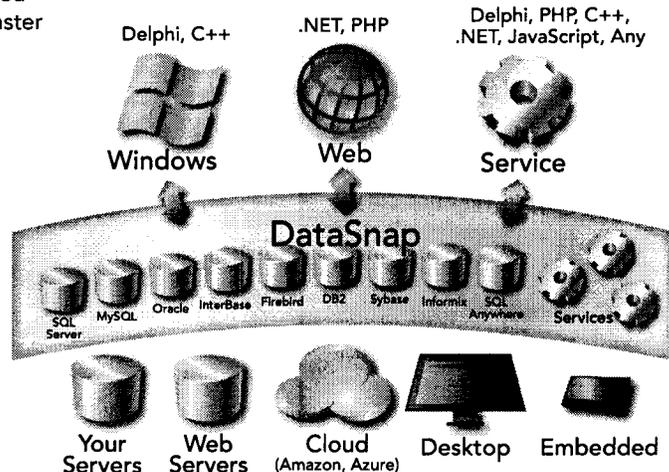
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Embarcadero RAD Studio XE is a comprehensive rapid application development suite and the fastest way to visually build GUI-intensive, data-driven applications for Windows, .NET, PHP and the Web. RAD Studio XE includes Delphi®, C++Builder®, Delphi Prism™, and RadPHP™; providing powerful compiled, managed and dynamic language support, heterogeneous database connectivity, rich visual component frameworks, and a vast 3rd party ecosystem – enabling you to deliver applications up to 5x faster across multiple Windows, Web, and database platforms.

RAD Studio's development environments dramatically simplify and speed visual and data-intensive application development for GUI desktop and touch-screen applications, database-driven, multi-tier, cloud, and Web applications and services.

- The fastest way to build ultra-rich, ultra-fast applications across multiple platforms
- Reduce development time using pre-built components
- Future-proof your application



## THE FASTEST WAY TO BUILD ULTRA-RICH, ULTRA-FAST APPLICATIONS ACROSS MULTIPLE PLATFORMS

RAD Studio is the only development suite that supports rapid development across native Windows, managed .NET and PHP web applications. RAD Studio combines three IDEs that provide the optimal and most efficient developer experience for each platform. Included profiling tools help ensure fast runtime performance of your apps. The native compiled performance of Delphi and C++Builder applications give you power and speed for tasks like visualizing data, controlling hardware in real time, and manipulating 3D objects.

- Delphi XE and C++Builder XE for rapidly building high-performance native Windows applications
- Delphi Prism XE for rapidly building .NET and cross-platform Mono applications which can target Windows, Linux and Mac OS X
- RadPHP XE, a complete PHP IDE and the only choice for rapid drag-and-drop visual development of PHP web applications

## REDUCE DEVELOPMENT TIME USING PRE-BUILT COMPONENTS

With RAD Studio XE, you get the widest array of component-based development solutions available. With Delphi and C++Builder, you can build applications up to 5x faster using hundreds of pre-built components from the VCL component library as well as thousands of free and commercial components available for nearly every imaginable application. RadPHP provides the only visual component library for PHP web development, bringing the rapid visual development benefits of Delphi to the world of PHP.

- Delphi and C++Builder VCL with advanced components for database, multi-tier, and cloud apps
- Delphi Prism component-based development for Windows Forms, ASP.NET, and Silverlight applications
- RadPHP Component Library including Google Maps and Facebook components
- Thousands of additional components available from a vibrant community of partners and developers

## FUTURE-PROOF YOUR APPLICATIONS

Embarcadero's DataSnap® framework and data access drivers enable you to build one system that can seamlessly connect to a variety of data sources while retaining vendor-specific database features, performance and control. If you change databases as your needs change, the dbExpress framework in Delphi and C++Builder simplifies switching between databases. If you need to connect with new systems, DataSnap supports a wide variety of industry-standard connectivity protocols, services and databases.

- dbExpress in Delphi and C++Builder with native high speed support for Microsoft SQL Server, InterBase, DB2, Oracle, Sybase, MySQL, Firebird, and other popular databases
- Platform-standard database connectivity options for .NET and PHP
- DataSnap with JSON, REST, COM, HTTP, TCP/IP, PHP, JavaScript, .NET and XML support for client/server, multi-tier connectivity with virtually any other system, and easy cloud deployment

## Key Features

### Windows Development

- Fast drag-and-drop design
- Over 500 VCL controls included
- Built-in touch and gesturing support
- dbExpress with support for 9 major databases
- DataSnap n-tier middleware with JSON, REST, HTTP, COM, and XML
- UML /code metrics and audits
- Build 32-bit apps that run on 32-bit and 64-bit versions of Windows
- Target Windows 2000, XP, Vista, and Windows 7 from single source

### .NET Development

- Build .NET apps and cross-platform Mono apps targeting Windows, Linux and Mac OS X
- Easy-to-learn Delphi Prism programming language
- Develop on Windows and Mac OS X
- Support for the latest .NET technologies
- Build DataSnap .NET clients to connect to Delphi multi-tier middleware
- ASP.NET and Silverlight development

### PHP Web Development

- Complete PHP IDE with editor, debugging and profiling
- Visual designers for PHP applications and HTML files
- More than 75 visual PHP components

### New in RAD Studio XE

- RadPHP added to RAD Studio
- Subversion integration
- DataSnap RESTful server support, encryption and compression
- Performance profiling
- Build process automation tools
- Easy deployment to the cloud on Amazon EC2
- Component-based connectivity to Windows Azure cloud data storage
- Performance and quality enhancements throughout
- RadPHP components for Facebook app development
- Free access to select earlier version licenses

Feature	Description
<b>Delphi XE and C++Builder XE for Native Windows Development</b>	
<b>High Productivity Integrated Development Environment (IDE)</b>	
IDE and Database Tools	Include new Subversion version control integration, IDE Insight, project manager, visual designers, object inspector, class explorer, data explorer and SQL query builder
Productivity Tools	Performance and memory profiling, logging, and build automation
Debugging and Unit Testing	Integrated debugger with new multi-thread debugging, remote debugging, and unit testing
<b>Language and Compiler</b>	
High-Performance 32-bit Optimizing Delphi Native Code Compiler	Includes new Delphi language support for RTTI and custom attributes, plus Unicode, generics, and anonymous methods
C++ Compiler (bcc32) and libraries	ANSI/ISO standard C++ compiler plus Dinkumware STL and Boost C++ libraries with TR1 support
<b>VCL – Visual Component Library</b>	
VCL Library	Enables rapid drag-and-drop visual development with hundreds of components for rapidly building Microsoft Windows applications.
<b>Database, Multi-Tier and Cloud</b>	
Database Connectivity and Database Drivers	Remote and local connectivity to Oracle, Firebird, DB2, Microsoft SQL Server, Informix, Sybase, InterBase, MySQL, and SQL Anywhere in Enterprise and Architect editions. Local connectivity to InterBase and MySQL in the Professional edition.
InterBase Developer Edition	Highly scalable, powerful, embeddable database with development license
DataSnap	Create multi-tier database applications with middle tier application servers and connect to them from thin clients.
Cloud Computing	Component-based access to Windows Azure storage services and easy cloud deployment to Amazon EC2
<b>Web Application Development and Remoting</b>	
VCL for the Web	Complete RAD Web Application Framework with AJAX and full WYSIWYG VCL based Web page design – build Web apps like desktop VCL
<b>Complete Development Solution</b>	
UML Modeling	Includes class diagrams and synchronization between the model and source code
Earlier version access	Includes access to earlier versions 2010, 2009, 2007, Delphi 7, and C++Builder 6

## System Requirements\*

- 1 GB RAM (2 GB+ recommended)
- Up to 5 GB free hard disk space depending on components installed
- DVD-ROM drive (if installing from a Media Kit DVD)
- 1024 x 768 or higher-resolution monitor
- Intel® Pentium® or compatible, 1.6 GHz minimum (2GHz+ recommended)
- Mouse or other pointing device
- Microsoft® Windows 7 (32-bit and 64-bit)
- Microsoft® Windows Vista™ SP2 (32-bit and 64-bit) requires administrator rights
- Microsoft® Windows XP Home or Professional (32-bit and 64-bit) SP2 or SP3
- Microsoft® Windows Server® 2003 SP1 or 2008 (32-bit and 64-bit)

\* Detailed system requirements by product are available on the Delphi XE, C++Builder XE, Delphi Prism XE and RadPHP XE pages at [www.embarcadero.com](http://www.embarcadero.com)

Feature	Description
<b>Delphi Prism XE for .NET Development</b>	
<b>Delphi Prism Language</b>	
Delphi-based Programming Language	The Delphi Prism programming language is easy to learn, easy to understand, and a great way for Delphi for Win32 developers to get started with .NET programming
<b>Target Multiple Platforms</b>	
Target Windows, Linux and Mac OS X with Mono applications	Target multiple .NET and Silverlight versions plus multi-platform deployment of applications using the Mono Framework
<b>Integrated Design Environment (IDE) and Integration</b>	
Integrates with Microsoft Visual Studio and MonoDevelop IDEs	Gives development flexibility to run standalone or integrated into Visual Studio as well as developing on Windows or Mac
Works with MonoTouch to create iPhone apps	Use Delphi Prism on the Mac with Novell MonoTouch (sold separately) to create apps for the iPhone OS
<b>Web Application Development</b>	
ASP.NET Development	Delphi Prism provides extensive support for the ASP.NET project system provided with Visual Studio including a dbExpress ASP provider for ASP.NET
<b>Database Application Development, Access and Design</b>	
Database Connectivity	The .NET programming environment for building database applications based on native database formats or XML data plus dbExpress connectivity to InterBase
DataSnap	Building .NET DataSnap client applications that access Delphi or C++Builder DataSnap servers
<b>RadPHP for PHP Web Development</b>	
<b>Integrated Development Environment (IDE)</b>	
Visual PHP design surface and HTML visual designers	Create user interfaces, web pages, and template forms via drag-and-drop
Customizable PHP Source Code Editor	Includes color syntax highlighting which makes spotting syntax easier
<b>RadPHP Component Library</b>	
More than 75 reusable components	For user interfaces, database apps, Zend Framework, Google Maps, Facebook, and more
<b>Integrated PHP Debugging and Profiling</b>	
Integrated XDebug Debugger	This faster and more powerful debugger helps you find and fix errors
Integrated PHP Profiler	Helps you locate performance bottlenecks

## Product Editions

### Professional

- Designed for software developers and teams building native Windows, .NET, and web applications with (or without) embedded and local database persistence.

### Enterprise

- For building client/server, multi-tier, and Web applications with seamless connectivity with a variety of database servers, DataSnap, two-way modeling, build automation tools, and a comprehensive quality tool set.

### Architect

- Combines data-driven rapid application development for native Windows and .NET with rich visual data modeling to help developers understand, design, and get the most value out of enterprise databases and data structures.

Download a Free Trial at [www.embarcadero.com](http://www.embarcadero.com)

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# RadPHP™ XE

The fastest way to build PHP applications

embarcadero

PHP

Embarcadero® RadPHP™ XE revolutionizes web development with a completely integrated, rapid visual development approach and component framework for PHP. The powerful PHP editor and debugger increase coding speed and efficiency. The integrated RadPHP component library helps developers quickly and visually create PHP web and Facebook applications, and the library can be extended with third party and open source components.

Rapidly create data-enabled applications with seamless access to leading databases, and build web clients that connect with multi-tier DataSnap servers created with Delphi and C++Builder. RadPHP XE is the fast way to build powerful and reliable PHP web applications.

- Complete PHP IDE
- Easily build PHP applications with drag-and-drop
- Painlessly track down errors

## COMPLETE PHP IDE

RadPHP delivers a complete IDE with all the tools you need for PHP coding and development.

The customizable source code editor includes advanced features like color syntax highlighting, bookmarks to ease navigation through large files, and Code Insight to assist in the selection of properties and methods. Use the Project Manager to display and organize the contents of your projects. The new History Manager provides automatic multi-level file backups, file differencing and restore.

- Ultra-fast IDE load times make RadPHP your perfect all-around PHP code editor
- IDE Insight for one-click search-based navigation and command execution within the IDE
- Integrated database tools for connecting with, browsing and querying data sources

## EASILY BUILD PHP APPLICATIONS WITH DRAG-AND-DROP

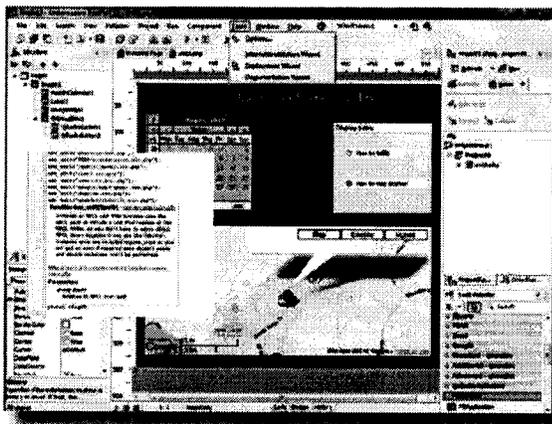
RadPHP is the only PHP development solution with drag-and-drop visual design. RadPHP provides both code and design views of PHP applications and HTML pages in the integrated development environment (IDE). The design view of the application enables developers to build user interfaces and database connections by simply dragging and dropping components from the Tool Palette onto a form. Properties and events can be set via the Object Inspector and changes to properties such as font style, color, and size are immediately reflected in the design view.

- Visual designers for both PHP web applications and HTML files
- More than 150 included components for building user interfaces, displaying data, Google Maps, and much more
- New components enable you to rapidly build Facebook applications

## PAINLESSLY TRACK DOWN ERRORS

The quality tools in RadPHP can help make the normally frustrating process of tracking down bugs and errors in code quick and painless. Quality checking starts as you type with Error Insight syntax checking, so you can easily fix syntax errors on the fly. The integrated debugger helps you find errors, view breakpoints, and examine local and global variables. Use the PHP performance profiler to help ensure and improve the performance of your Web apps.

- Integrated PHP Profiler to measure runtime performance and help identify bottlenecks
- Advanced breakpoints with Tooltips, actions, and groups for complete debugging control



The RadPHP development environment includes integrated editor, visual designers, debugger, and database tools.

## Key Features

- PHP editor with coding tools
- Integrated debugger
- Error Insight
- Performance profiling
- Database and query tools
- Visual form designer
- HTML visual designer
- 75+ visual components

## New in RadPHP XE

- IDE Insight to find and execute commands
- New project management tools
- Faster and more powerful debugger
- Enhanced breakpoints and watches
- Support for the Firebird database in the IDE
- Ultra-fast load time
- Performance improvements throughout
- Facebook components
- New jQuery components
- DataSnap connectivity

Features	Features
<b>Integrated Development Environment (IDE)</b>	
Visual PHP design surface and HTML visual designers	Create user interfaces, web pages, and template forms via drag-and-drop
Two-Way-Tools	Automatically synchronizes code between editor and form designer
Object Inspector	Enables visual customization of PHP and AJAX components without writing code
Code Explorer	Simplifies PHP source code navigation
PHP Project Manager	Helps you view and organize project files
Structure Pane	Shows the hierarchy of components displayed on the designer
International Encodings and Characters	Supports international encodings and character sets
History Manager	For automatic multi-level file backups, file differencing and restore
<b>RadPHP Component Library</b>	
Customizable Palette	Includes more than 75 reusable components
Standard Components	Supports frames, menus, buttons, checkboxes, radio buttons, scroll bars, panels, action lists, and validation
Advanced Components	Includes image button, Flash object, image list, rich edit, progress bar, calendar, tree view, timer, web services, PEAR data grid, jQuery, Google Maps and many more
Database Components	Enables access to databases, tables, queries, and stored procedures, as well as data grids and navigation plus native database components for MySQL, InterBase, and Oracle
RadPHP Components for the Zend Framework	Helps simplify web development while promoting best practices
Components for Facebook	Ease the development of applications for Facebook with components for Facebook applications, permission, friends, sharing and more
Extensibility	Extend the RadPHP component library at any time with third-party libraries or with your own custom components
<b>Database Application Development</b>	
Data Explorer	Browse database server-specific schema and objects
Support for Additional Databases in the Data Explorer	Includes Oracle, Microsoft SQL Server, MySQL, PostgreSQL, DB2, Sybase, Informix, SQL Anywhere and InterBase
Drag and Drop	Supports drag and drop from the Data Explorer to the visual designer to create data-driven apps with no coding
Native Database Components	Supports Oracle, InterBase and MySQL
DataSnap Connectivity	Build client applications with RadPHP and connect to DataSnap servers built with Delphi and C++Builder
<b>Powerful PHP and HTML Editing</b>	
Customizable PHP Source Code Editor	Includes color syntax highlighting which makes spotting syntax easier
Code Folding	Simplifies the viewing of source code
Code Insight	Assists in the selection of properties and methods
Error Insight	Provides syntax checking as you type
<b>Integrated PHP Debugging and Profiling</b>	
Integrated XDebug Debugger	This faster and more powerful debugger helps you find and fix errors
User-Centered Interface	Enables you to view breakpoints, local variables, and global variables
Integrated PHP Profiler	Helps you locate performance bottlenecks

### System Requirements

Hardware Requirements	Processor	Supported Operating Systems	Supported Browsers
<ul style="list-style-type: none"> <li>512 MB RAM (1 GB for Microsoft® Windows Vista™)</li> <li>300 MB free hard disk space</li> <li>CD-ROM or DVD-ROM drive</li> <li>SVGA or higher-resolution monitor (XGA recommended)</li> <li>Mouse or other pointing device</li> </ul>	<ul style="list-style-type: none"> <li>Intel® Pentium® III/M 1.4 GHz, or Pentium IV 1.4 GHz minimum</li> </ul>	<ul style="list-style-type: none"> <li>Microsoft Windows 7</li> <li>Microsoft® Windows Vista™</li> <li>Microsoft® Windows Server® 2008 (SP2)</li> <li>Microsoft® Windows Server® 2003 (SP1)</li> <li>Microsoft® Windows XP Professional (SP3)</li> <li>Windows® 2000 Professional (SP4)</li> <li>Windows® 2000 Server (SP4)</li> </ul>	<ul style="list-style-type: none"> <li>Internet Explorer 8</li> <li>Internet Explorer 7</li> <li>Internet Explorer 6 or earlier</li> <li>Firefox 3</li> <li>Firefox 2</li> <li>Firefox 1.x</li> <li>Chrome 6</li> <li>Chrome 5</li> <li>Chrome 4</li> <li>Opera</li> <li>Safari</li> </ul>

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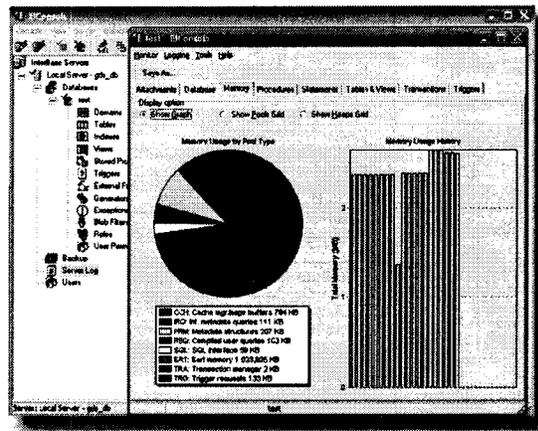
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InterBase XE is built for developers to create amazingly fast, resilient business-critical applications for embedding in devices and small enterprise, desktop, and workgroup solutions. InterBase has the features developers need and doesn't get in their way. InterBase is a full-featured SQL DBMS that

- Enables real-time queries against transactional data
- Allows rapid application development
- Provides extraordinary transaction processing speed
- Requires minimal hardware and near zero administration

InterBase XE is the perfect foundation for embedded solutions. InterBase also supports heterogeneous O/S connectivity for Windows<sup>®</sup>, Linux, Solaris<sup>™</sup>, and Mac OS<sup>®</sup> X.



IBConsole lets DBAs navigate and administer their InterBase data sources easily with a powerful, yet easy to use GUI.

## PERFORMS AND SCALES TO RUN THE MOST DEMANDING APPLICATIONS EASILY

InterBase XE is one of the fastest native databases available. Using its built-in symmetric multiprocessing (SMP), InterBase can take advantage of today's fastest multi-core CPUs and multi-CPU systems. Performance enhancements and optimizations have been added in a number of areas, such as batch updates, query optimizations, and OLTP improvement via journaling. InterBase XE uses a multi-generational architecture providing unique versioning capabilities that result in high data availability for transaction-processing users and decision-support users – simultaneously.

## SECURES AND PROTECTS SENSITIVE DATA AND ENABLES COMPLIANCE

Safeguarding private and personal information is critical to your business. InterBase XE is a small-footprint, high-performance DBMS with the encryption capabilities required to protect all your business-critical information. InterBase XE supports sophisticated encryption technology ensuring your data is protected – at rest and over the wire. InterBase XE supports the Advanced Encryption Standard (AES), a symmetric-key encryption standard adopted by the U.S. government and Data Encryption Standard (DES) encryption. InterBase can encrypt data stored in the database, transmitted across networks and stored in database backups to ensure privacy is maintained for the life of your data.

## PROVIDES CONSISTENT, FAST AND RELIABLE TRANSACTION PROCESSING BASED ON MULTI-VERSION ARCHITECTURE

InterBase XE is the ideal platform to manage the complexity of today's business requirements within the constraints of today's economic reality. InterBase XE provides enterprise-class features including transaction management and concurrency control, referential integrity, high-availability and a multi-version architecture to eliminate blocking. InterBase delivers fast, high-volume, high-throughput transaction processing, with continuous availability to satisfy the most demanding applications. And InterBase XE supports all major development paradigms including Java, C, C++, .NET, Delphi, PHP, and Ruby.

## INSTALLS IN MINUTES AND REQUIRES LITTLE OR NO ADMINISTRATION

InterBase XE combines simple installation and automatic crash recovery, with a self-tuning engine that makes it well-suited for embedding. InterBase is ideal for ISVs, OEMs, and VARs requiring a database that is compact in memory and disk size but without compromising sophisticated features to support high-powered, business-critical applications. And, unlike many other enterprise databases that require expensive ecosystems of support and maintenance, InterBase XE is virtually maintenance-free.

## Key Benefits

- High performance ultra-lightweight database
- Full featured, ACID compliant, ANSI SQL
- Rich choice of tools and languages
- Scales easily
- Proven reliability
- Lowest total cost of ownership

## Related Products

**Rapid SQL<sup>®</sup>**  
Write high-performance, quality SQL in an integrated cross-platform database development environment.

**DB Change Manager<sup>™</sup>**  
A complete set of schema, data and configuration tools to manage the database change management lifecycle.

**RAD Studio XE**  
The industry's most powerful rapid application development suite for building amazing Windows applications.

**Delphi<sup>®</sup> XE**  
The fastest way to build native Windows applications.

**C++Builder<sup>®</sup> XE**  
RAD visual development meets C++ power.

**JBuilder<sup>®</sup>**  
The fastest way to develop enterprise Java<sup>™</sup> applications.

**3rdRail<sup>™</sup>**  
The fastest way to build Ruby on Rails<sup>™</sup> web applications.

**Embarcadero<sup>®</sup> All-Access<sup>™</sup>**  
Instant access to the languages, tools, and technologies to design, build, and run your software applications and database systems.

Feature	Description
<b>New!</b> Stronger password protection with SHA-1 cryptographic hash function	InterBase XE supports passwords up to 32 bytes long. Enables more robust authentication for InterBase databases and compliance with password requirements from the Payment Card Industry – Data Security Standard (PCI-DSS) and other security requirements.
<b>New!</b> Support for Dynamic SQL in Stored Procedures	Now you can leverage a very flexible and powerful tool from within Stored Procedures. With InterBase XE, you can use dynamic SQL to accomplish tasks such as adding where clauses to a search based on what fields are filled out on a form or to create tables with varying names from Stored Procedures with Execute Statement
<b>New!</b> Support for increase buffer caches for improved performance	Improved scalability and performance with the ability to configure up to 75M pages on 64-bit systems to improve performance on large data sets.
<b>New!</b> Optimized performance of large objects with Stream methods	Simpler, faster and standard compliant access to BLOB data types.
<b>New!</b> Improved scalability with the ability to handle 8 times more data.	Handle up to 8 times more data in InterBase XE with 40-bit record IDs
<b>New!</b> 64-bit native binary application	Ability to leverage the 64-bit capabilities and scalability of underlying systems. Fully compatible with 32-bit InterBase applications.
<b>New!</b> Table-Specific Blocking Factors	Increases storage capacity of large tables while reducing memory requirements for run-time retrieval
<b>New!</b> Larger index key segment size	Now larger column data can use this for both single-byte character sets and multi-byte (such as UTF8) columns.
<b>New!</b> Support for larger external files	InterBase XE now supports external files >4GB
Over-the-Wire (OTW) Encryption	Encrypts the data as well as any other communications (commands, etc.) between servers and clients <b>New</b>
Database and Column-Level Encryption	Encrypts a database and/or individual columns in a database <b>New</b>
To-Go Edition	Is a small, portable version of the Desktop Edition. Target applications for the To-Go Edition include small devices and public kiosks, as well as Value Added Reseller (VAR) and OEM applications that were built using InterBase. <b>New</b>
Built-in SMP Support	Gives you high performance on multiple CPU systems including multi-core CPUs
Journaling with Write Ahead Logging (WAL)	Improves VLDB management, OLTP performance, and facilitates disaster recovery. Only available with Server Edition.
Journal Archiving	Provides disaster recovery in the event a database becomes unavailable due to hardware or software failures that may make the primary database permanently inaccessible. Only available with Server Edition.
Point-in-Time-Recovery	Allows journal based recovery based on timestamp for greater recovery flexibility. Only available with Server Edition.
Incremental Backup	Backup databases between maintenance sessions
Batch Updates	Allow you to send a group of SQL statements, reducing the network traffic, resulting in improved performance, especially in LAN and WAN environments
Blob/Text SQL Syntax Enhancements	Supports use of BLOBs and VARCHAR data interchangeably, even in stored procedures
Extended International Character Support	Supports character sets via Unicode UCS-2 and UTF-8
Concurrent Running	Enables multiple instances of InterBase® to run on the same machine simultaneously for application isolation and load balancing
Global Temporary Tables	Allows you to implement the functionality of SQL global temporary tables to significantly ease application development
Embedded Database User Authentication	Enables isolated user authentication for unrelated applications
Support for the SQL99 SAVEPOINT portability	Supports Windows®, Linux, and Java™, with complete database portability
Performance Monitoring	Includes an enhanced, more intuitive IBConsole user interface. Only available with Server Edition.
Multigenerational Architecture	Enables unparalleled concurrency between readers and writers
Native Multi-Threaded Server	Provides background garbage collection and multi-user page buffer management
Active Database functions for extensible query support	Includes modular triggers and event alerts, user-defined functions for extensible query support
Stored Procedures	Encapsulates business logic on server for reduced network traffic

### System Requirements

#### InterBase XE (10.0):

- 32 MB RAM
- 20/35 MB hard disk space for compact/full install
- CD-ROM drive

#### Processor:

- Microsoft® Windows® and Linux: Intel® x86
- Sun Solaris™: SPARC
- Macintosh: Intel

#### Windows:

- Microsoft® Windows Vista™ (requires administrator rights)
- Microsoft® Windows Server® 2008 R2 (64-bit)
- Microsoft® Windows® XP (SP3)
- Microsoft® Windows 7 (32-bit and 64-bit)

#### Macintosh:

- Mac OS® X 10.5
- Mac OS® X 10.6

#### Linux:

- Red Hat Enterprise Linux 5
- SuSE Linux 10 and 11

#### Solaris™:

- Sun™ Solaris 10

#### JDBC™:

- JDK™ 1.2, 1.3, 1.4, J2SE™ 5, Java™ SE 6, JDBC Type 4 Driver (this applies to Server Edition and Desktop Edition)

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# Delphi® XE

The fastest way to build native Windows applications

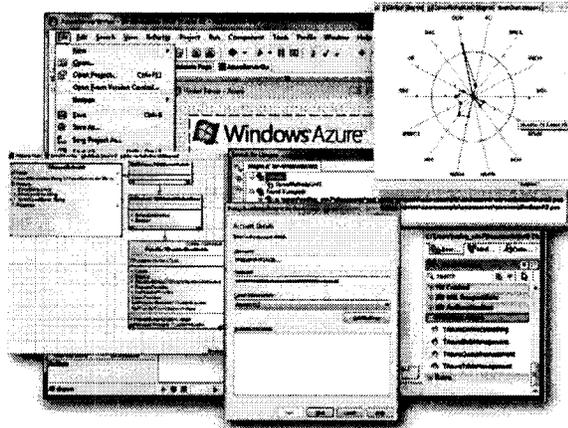
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Embarcadero® Delphi® XE is the fastest way to deliver ultra-rich, ultra-fast Windows applications. Used by millions of developers, Delphi combines a leading-edge object-oriented language, fast native compilation, heterogeneous database connectivity, and a rich visual component-based development framework supported by thousands of third party components and add-ons.

Delphi's fully visual two-way RAD IDE is designed to dramatically simplify and speed development of visual and data-intensive applications including native Windows GUI desktop applications, interactive touch-screen, kiosk, and database-driven multi-tier, cloud, and Web applications. Deliver applications up to 5x faster and with fewer developers across multiple Windows and database platforms.

- The fastest way to build ultra-rich, ultra-fast applications
- Reduce development time using pre-built components
- Future proof your application development



Delphi XE includes new productivity tools, cloud computing, and expanded multi-tier development

## THE FASTEST WAY TO BUILD ULTRA-RICH, ULTRA-FAST APPLICATIONS

The native compiled performance of Delphi applications gives you the power for tasks like visualizing data, controlling hardware in real time, and manipulating 3D objects. Programming in Delphi is more efficient than developing in other "rapid" or "visual" development platforms with Delphi's component-based development model. Component-based means reusability is built-in, higher quality, and applications functionality is and easier to extend than with libraries alone.

- Powerful and fast Delphi language and compiler with modern features such as generics, anonymous methods, and attributes
- Tools for profiling, logging, build automation, reporting, charting, database connectivity, and web development
- Ultra-fast and small-footprint compiled runtime performance, rich interactive user experiences, unparalleled database and service connectivity, and no cumbersome, slow, or resource-hungry runtime environments like .NET, VB, or Java

## REDUCE DEVELOPMENT TIME USING PRE-BUILT COMPONENTS

With Delphi, you'll build applications up to 5x faster using pre-built components and drag-and-drop visual design. Hundreds of components go far beyond building user interfaces with advanced functionality for building database apps and connecting with cloud services. Extend and customize the included components, create your own, or use the thousands of free and commercial components for every imaginable need. If you can think of it, there's probably a Delphi component for it.

- Advanced components for user interfaces, database, multi-tier, and web apps
- New cloud components for connecting to and working with Windows Azure data storage
- Components for touch and gesture enabling applications including a virtual keyboard
- Thousands of additional Delphi components are available from a vibrant community of Delphi partners and developers

## FUTURE PROOF YOUR APPLICATION DEVELOPMENT

Delphi's DataSnap® framework and dbExpress™ data access drivers enable you to build one system that can seamlessly connect to a variety of data sources while retaining vendor-specific database features with native performance and control. If you change databases as your company grows, the dbExpress framework simplifies switching between databases. If you need to connect with new systems, DataSnap supports a wide variety of industry-standard connectivity protocols.

- Native high speed support for Microsoft SQL Server, InterBase, DB2, Oracle, Sybase, MySQL, Firebird, and more
- DataSnap with JSON, REST, COM, HTTP, TCP/IP, PHP, JavaScript, .NET and XML support for client/server and multi-tier connectivity with virtually any other system
- Easy cloud deployment to Amazon EC2

## Key Features

- RAD IDE with fast drag-and-drop design
- Over 500 VCL controls included
- Built-in touch and gesturing support
- dbExpress with support for 9 major databases
- DataSnap n-tier middleware with JSON, REST, HTTP, COM, and XML
- Debugging and quality tools
- UML / code metrics and audits
- Build 32-bit apps that run on 32-bit and 64-bit versions of Windows
- Target Windows 2000, XP, Vista, and Windows 7 from single source

## New in Delphi XE

- DataSnap RESTful server support, encryption and compression
- Subversion integration in the IDE
- Performance profiling with AQtime Standard
- Build process automation with FinalBuilder Embarcadero Edition
- Command line audits, metrics, code formatting, and documentation generation
- Advanced internet communication components from IP\*Works
- Easy deployment to the cloud on Amazon EC2
- Component-based connectivity to Windows Azure cloud data storage
- IDE enhancements for searching, modeling, code generation
- More than 1,500 performance and quality enhancements
- Includes free access to earlier versions Delphi 2010, 2009, 2007 and Delphi 7
- And much more!

Features	Description
<b>High Productivity Integrated Development Environment (IDE)</b>	
IDE and Database Tools	Include new Subversion version control integration, IDE Insight, project manager, visual designers, object inspector, class explorer, data explorer and SQL query builder
Profiling and Performance	AQtime Standard Edition for performance and memory profiling plus CodeSite Express logging
Build automation	FinalBuilder Embarcadero Edition for build automation and new command line audits, metrics, code formatting and documentation generation
Unicode-Enabled Code Editor	Includes color syntax highlighting and Code Insight, refactorings, live code templates and class completion
Debugging and Unit Testing	Integrated debugger with new multi-thread debugging, remote debugging, and unit testing
International Development	Includes Unicode enabled development environment and VCL library, easy language switching in the IDE, resource DLL wizard, and translation tools
<b>Language and Compiler</b>	
High-Performance 32-bit Optimizing Delphi Native Code Compiler	Includes new Delphi language support for RTTI and custom attributes, plus Unicode, generics, and anonymous methods
Microsoft Windows SDK	Includes support for Windows 7 including the Direct2D API and themed applications
<b>VCL - Visual Component Library</b>	
VCL Library	Enables rapid drag-and-drop visual development with hundreds of components for rapidly building Microsoft Windows applications. Now includes seamless Windows 7 support, and graceful fallback compatibility with Windows Vista, XP, and 2000. VCL source code is included.
Touch and Gesture Interface Support	Build touchscreen, tablet and kiosk apps with an integrated gesturing framework with multi-OS support for Windows 7, Vista, XP, and 2000, gesture designer, virtual keyboard, and interactive multi-touch gestures for panning, zooming and rotating
<b>Database, Multi-Tier and Cloud</b>	
Database Connectivity and Database Drivers	Remote and local connectivity to Oracle, Firebird, DB2, Microsoft SQL Server, Informix, Sybase, InterBase, MySQL, and SQL Anywhere in Enterprise and Architect editions. Local connectivity to InterBase and MySQL in the Professional edition.
InterBase Developer Edition	Highly scalable, powerful, embeddable database with development license
DataSnap	Create multi-tier database applications with middle tier application servers and connect to them from thin clients. Place business rules and write stored procedure code in Delphi. Enhanced with new ServerMethods, wizards and communication protocols.
Cloud Computing	Component-based access to Windows Azure storage services and easy cloud deployment to Amazon EC2
<b>Web Application Development and Remoting</b>	
VCL for the Web	Complete RAD Web Application Framework with AJAX and full WYSIWYG VCL based Web page design – build Web apps like desktop VCL
COM Support with Wizards	Enables creation of COM+ objects and servers and type library editor
<b>Complete Development Solution</b>	
UML Modeling	Includes class diagrams and synchronization between the model and source code. Enterprise and Architect editions also include sequence diagrams, collaboration diagrams, state charts, deployment diagrams, use case diagrams, activity diagrams, component diagrams, and design patterns.
Code Audits and Metrics	Code Audits for deep code analysis to better understand the coding style and approach. Code Metrics allow for deep understanding and static analysis of the health of the object domain.
Database Modeling and Design	Embarcadero® ER/Studio® 8.5 Developer Edition, a database modeling and design tool for better understanding database structures
Bundled Tools	Includes Rave Reports, glyFX icon library, TeeChart charting components, InstallAware Express installer, and additional software from Embarcadero partners
Earlier version access	Includes access to earlier versions Delphi 2010, 2009, 2007 and Delphi 7

**System Requirements**

<b>Hardware Requirements</b>	<b>Supported Operating Systems</b>
<ul style="list-style-type: none"> <li>• 1 GB RAM (2 GB+ recommended)</li> <li>• 3 GB free disk space for Delphi</li> <li>• 750 MB free hard disk space for prerequisites</li> <li>• DVD-ROM drive</li> <li>• 1024x768 or higher-resolution monitor</li> </ul>	<ul style="list-style-type: none"> <li>• Microsoft® Windows® 7 (32-bit and 64-bit)</li> <li>• Microsoft Windows Vista SP2 (32-bit and 64-bit, requires administrator rights)</li> <li>• Microsoft Windows XP Home or Professional (32-bit and 64-bit, SP2 or SP3)</li> <li>• Microsoft Windows Server 2003 (SP1) or 2008 (32-bit and 64-bit)</li> </ul>
<b>Processor</b>	
Intel® Pentium® or compatible, 1.4 GHz minimum (2GHz+ rec.)	

**Product Editions**

<b>Professional</b>	<b>Architect</b>
<ul style="list-style-type: none"> <li>• Local database connectivity to InterBase and MySQL</li> <li>• VCL for the Web for standalone apps only, with limit of five connections, and no ISAPI or HTTPS</li> </ul>	Includes all Enterprise edition features, plus ER/Studio Developer edition for database modeling and design
<b>Enterprise</b>	<b>Starter</b>
Includes all Professional edition features, plus: <ul style="list-style-type: none"> <li>• Database server connectivity to InterBase, Firebird, MySQL, Microsoft SQL Server, Oracle, DB2, Informix, and Sybase</li> <li>• DataSnap multi-tier database application development</li> <li>• VCL for the Web for standalone apps, service apps and ISAPI extensions; with HTTPS support and with no connection limit</li> <li>• Additional UML modeling capabilities</li> </ul>	Delphi Starter edition is a great way to get started with Delphi development. Delphi Starter includes a subset of the features listed here and a limited commercial use license. Find out more about Starter at <a href="http://www.embarcadero.com/products/delphi/starter">www.embarcadero.com/products/delphi/starter</a>

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Schema Examiner

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Server Response from: ETNACDC01

## ID: 25823, TeeChart Pro v8 for RAD Studio 2009



by David Berneda Email: Anonymous

TeeChart Pro offers hundreds of Graph styles in 2D and 3D, 40 mathematical and statistical Functions for you to choose from together with an unlimited number of axes and 22 Palette components.

DOWNLOAD

**Download 36.4MB**

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DESCRIPTION

TeeChart Pro VCL is a leading charting and graphing tool that has been developed through an interactive process of response to customer requirements and innovations since 1997.

TeeChart Pro offers hundreds of Graph styles in 2D and 3D, 40 mathematical and statistical Functions for you to choose from together with an unlimited number of axes and 22 Palette components.

It includes powerful and complete editor dialogs for almost every component and sub-component allowing you to quickly design complex charting applications. The chart editor is further enhanced by the TeeCommander component (a toolbar with charting specific buttons) which provides one-click access to TeeChart editors and common features. These editors are available both at design-time and also at run-time.

For more information, see <http://www.steema.com/products/teechart/whatsnew.html>

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ER/Studio Data

Enterprise

ER/Studio Portal

Repository

ER/Studio Viewer

InterBase

J Optimizer

JBuilder

RadPHP

Rapid SQL

Schema Examiner

ToolBox

ToolCloud

## ID: 26176, TeeChart Pro for Delphi Prism .NET

by David Berneda Email: Anonymous

TeeChart Pro for .NET breaks the mould and industry standard by offering across the board support for Winform, WebForm, Compact Framework, Reporting Services, Gauges and Maps all in one action-packed version!

## DOWNLOAD

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## DETAILS

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## DESCRIPTION

TeeChart for .NET v3 continues in the TeeChart tradition of offering depth of functionality across a myriad of foreseeable application requirements. Built on more than 10 years of work with customers, the functionality-set is truly HUGE! Version 3 for .NET also embraces much of what's fantastic in Microsoft's .NET framework to offer for the first-time specifics for Reporting Services, ASP.NET with Ajax plus under the cover improvements such as use of generics and ICcloneables.

TeeChart breaks the mould and industry standard by offering across the board support for Winform, WebForm, Compact Framework, Reporting Services, Gauges and Maps all in one action-packed version! It will get better too! Version 3 is expected to pack more and more punch throughout the coming months.

TeeChart offers many Series types to visualize data and function types including many specialized financial functions, multiple axes, multiple tool, export to file or stream as image or as Text, HTML or Excel data or as optimized chart definition files for high speed network applications. Display features include customisable canvas objects, transparency and anti-aliasing, 2D and 3D views. TeeChart is high speed and multi-page and may be mouse zoomed and scrolled.

## Feature Summary

- \* 100% Managed C#.NET Charting Control
- \* Optional - Full C# sourcecode available
- \* Fully exploits Microsoft's .net Framework. Versions for Framework v1.0, v1.1, v2.0, v3.5
- \* Components for Winform, WebForm, Compact Framework and SQL Reporting Services
- \* Data aware - Direct access to .NET data sources
- \* Direct access to URL addressable Charts
- \* Designtime WebForm WYSIWYG Chart Control
- \* PocketPC and WindowsCE support.
- \* 12 standard Series types
- \* 45 Extended Series types
- \* 41 Statistical functions
- \* Functions includes ADX, Bollinger, Correlation, Exponential Trend, MACD, Median, Mode, Perimeter, Reducing number of Points, RSI and Variance
- \* Series Gallery
- \* 2D, 3D plus OpenGL 3D
- \* TeeChart Themes for template and colour palette management
- \* Direct high-speed, add of Array data to Chart. Very quick !
- \* Zoom, scroll and real time
- \* Multiple unlimited Custom Axes
- \* Stream export/import capability for BLOB storage and direct output to client (eg. browser)
- \* Image export as bitmap, metafile, JPEG, PNG, GIF, TIFF, PDF, SVG, EPS & native Chart format
- \* Data export as Excel, XML, HTML, CSV (Text) & native Chart format
- \* Royalty free in compiled desktop applications
- \* 31 Chart add-on tools including annotation and colour banding
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- \* Transparency and anti-aliasing on all Chart object Pens, Brushes, Fonts and Gradients
- \* Extensive demos for Visual Studio.NET including WinForms, ASP.NET WebForms and Compact Framework
- \* Ajax clientside WebChart processing
- \* Web functionality includes Hotspot, Scroll and Zoom Tools, and Mapping support
- \* New Text and XML Data Source Components
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- \* Runtime Chart Editor and Print Previewer
- \* Runtime Series ListBox and TeeCommander control bar
- \* Optional Professional level technical support

Base Chart control with headers, footers, 4 axes, legend, walls...

2D, 3D orthogonal and True 3D with perspective

SQL Reporting Services component

WebChart ASP.NET control with Ajax clientside Java tools

OpenGL Rendering

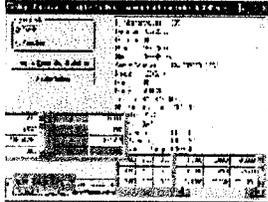
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Program Name: **ESBPCS-Stats for VCL**

Published By: **ESB Consultancy**

License Type: **Shareware**

Date Released: **May 21, 2010**

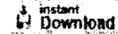
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### ESBPCS-Stats for VCL v5.4.0



Programming : **Delphi Tools**

**ESBPCS-Stats for VCL Description:**

ESBPCS-Stats is a subset of ESBPCS containing Components and Routines for Statistical Analysis and Matrix/Vector Manipulation In Delphi and C++ Builder. Includes Data Aware Components and full source, as well as a good subset of the controls.

ESBPCS-Stats is a subset of ESBPCS (ESB Professional Computation Suite) containing Components and Routines for Statistical Analysis and Matrix/Vector Manipulation in Embarcadero (formerly CodGear/Borland) Delphi or C++ Builder.

This subset is ideal for people who just want the Stats and/or Matrix/Vector parts of ESBPCS, though you can upgrade to the full version at any time. Also includes Components and routines covering Probability Distributions, Linear Regression, Hypothesis Analysis, Equation Solving and more.

The subset includes a good collection of Edits, SpinEdits, ComboBoxes, Memos, CheckBoxes, RadioGroups, CheckGroups as well as a huge collection of routines. Also includes Data Aware Components, Help and full source.

[Download ESBPCS-Stats for VCL](#)

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License: Shareware | Price: \$79.00 | Size: 31.8 MB | Downloads (136)

Platform: Windows 98, Windows 2000, Windows XP , Windows Vista

Change History:

Version	Date	Change Info
5.4.0	04/27/2010	HTML (.Net) Colour Support, Skype-support added to URL Labels and much more.

Term: Source - Borland - Codegear - C++ Builder - Statistics - Matrices - Vectors - Data Aware - Components - Delphi - Builder Components

**ESBPCS-Stats for VCL Copyright notice:**

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#### ESBPCS-Calcs for VCL

ESBPCS-Calcs is a subset of ESBPCS (ESB Professional Computation Suite) containing Components and Routines for Calculators and Unit Conversion In Borland Delphi and C++ Builder. This subset is ideal for people who just want the Calculators and/or...

#### ESBPCS for VCL - Components and Routines

ESB Professional Computation Suite (ESBPCS) is a collection of over 6000 routines/methods and over 235 classes/components in over 140 units for Embarcadero (formerly CodeGear/Borland) Delphi 7, 2005/Vin32, 2006/Vin32, 2007/Vin32, 2007, 2009, 2010 and...

#### SecureBridge

SecureBridge is a library of nonvisual components for Delphi, Delphi for .NET and C++Builder. They provide support for secure connection with remote services in public networks using SSH protocol. It is enough to place components that implement...

#### ABF Visual Components Library

ABF Visual Components Library is a suite for developers of any professional skill, who prefer to create own application as fast as possible with the guarantee of high quality and high performance. Product is compatible with all 32-bit versions of...

#### Advanced Data Import VCL

Advanced Data Import VCL is a component suite for Borland Delphi and C++ Builder that allows you to import data from files of the most popular data formats to the database. You can import data from MS Excel, MS Access, DBF, XML, TXT, CSV, ODF and HTML....

#### dbExpress driver for InterBase

dbExpress is a database-independent layer that defines a common interface to provide fast access to SQL database servers. For each supported server, dbExpress provides a driver as an independent library that implements the common dbExpress interfaces...

#### dbExpress driver for SQL Server

dbExpress provides a driver as an independent library that implements the common dbExpress interfaces...

#### dbExpress driver for MySQL

dbExpress is a database-independent layer that defines a common interface to provide fast access to SQL database servers. For each supported server, dbExpress provides a driver as an independent library that implements the common dbExpress interfaces...

#### dbExpress driver for Oracle

dbExpress is a database-independent layer that defines a common interface to provide fast access to SQL database servers. For each supported server, dbExpress provides a driver as an independent library that implements the common dbExpress interfaces...

#### Advanced Data Import VCL

Advanced Data Import Component Suite for Borland Delphi and C++ Builder will allow you to import your data to the database from files in the most popular data formats. You can import data from MS Excel, MS Access, DBF, XML, TXT and CSV. There will be...

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Program Name: ESBPCS for VCL - Components and Routines

Published By: ESB Consultancy

License Type: Shareware

Date Released: January 20, 2011

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## ESBPCS for VCL - Components and Routines v5.5.2



Programming : Delphi Tools

ESBPCS for VCL - Components and Routines Description:

ESB Professional Computation Suite (ESBPCS for VCL) provides a huge collection of Embarcadero (CodeGear) Delphi Routines and Components to make Data Entry and Manipulation easier for Delphi Developers and their end-users. Includes full source.

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ESB Professional Computation Suite (ESBPCS) is a collection of over 6000 routines/methods and over 235 classes/components in over 140 units for Embarcadero (formerly CodeGear/Borland) Delphi 7, 2005/Win32, 2006/Win32, 2007/Win32, 2007, 2009, 2010 and C++ Builder 2006, 2007, 2009, 2010, Borland Turbo Delphi Professional for Win32 and Borland Turbo C++ Professional for Win32, CodeGear RAD Studio 2007 (Win32 Personalities), CodeGear RAD Studio 2009, Embarcadero RAD Studio 2010, Delphi XE, C++ Builder XE, RAD Studio XE which are aimed at making "data entry & manipulation easier" for Developers and their Customers.

ESBPCS is also available in several subsets: ESBPCS-Calcs, ESBPCS-Dates, ESBPCS-Stats, ESBPCS-Lite as well as the Full version. All versions include source upon registration.

Components included cover Integer Edits, Float Edits, Hex Edits, IP Address Edits, Percentage Edits, Date Edits, Time Edits, Date/Time Edits, Month Edits, Time Edits, Complex Edits, Fraction Edits, Currency Edits, Calculator Edits, Calendar Edits, Button Edits, Degree/Minute/Second Edits, Comboboxes, Month Comboboxes, Day of Week Comboboxes, Time Zone Comboboxes, Country Comboboxes, Duration Comboboxes, SpinEdits, Month SpinEdit, DOW SpinEdits, Duration SpinEdits, Currency SpinEdits, Vector Edits, Matrix Edits, Button Edits, Calculators (Scientific and Programmer's), Calendars, Statistical Analysis, Labels, URL Labels, Math Labels, CheckBoxes, RadioGroups, CheckGroups, Memos, RichEdits and much more. As well, there are Data Aware versions of most of them.

Routines included cover Mathematics, Probability, Statistics, Complex Numbers, Fractions, Physics, Geometry, Astronomy, Longitude/Latitude, Unit Conversions, Strings, File IO, Registry, Financials, Country Lists, Holidays, Time Zones, Dates and Times, and much more.

Includes full source to all components and routines.

[Download ESBPCS for VCL - Components and Routines](#)

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Platform: Windows 2000, Windows XP, Win7 X32, Win7 X64, WinServer, WinVista, WinVista X64

Change History:

Version	Date	Change Info
5.5.2	01/07/2011	Improved Regional Settings Handling and other minor improvements

Term: Embarcadero - Source - Borland - Codegear - C++ Builder - Statistics - Calendars - Calculators - Math - Edit - Builder Components

**ESBPCS for VCL - Components and Routines Copyright notice:**  
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### SecureBridge

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### ESBPCS-Dates for VCL

ESBPCS-Dates is a subset of ESBPCS containing Components and Routines for Calendars and Date/Time Manipulation in Borland Delphi and C++ Builder - also covering Duration, TimeZones, Month Arithmetic, Week Arithmetic, different standards. Subset includes...

### SQL Server Data Access Components

SQL Server Data Access Components (SDAC) is a VCL/VCL.NET/CLX component library for fast direct access to Microsoft SQL Server from Delphi and C++Builder. SDAC is heavily performance- and stress-tested to provide the fastest available native...

### ABF Visual Components Library

ABF Visual Components Library is a suite for developers of any professional skill, who prefer to create own application as fast as possible with the guarantee of high quality and high performance. Product is compatible with all 32-bit versions of...

### Data Access Components for MySQL

Data Access Components for MySQL (MyDAC) is a VCL/VCL.NET/CLX component library for fast direct access to MySQL from Delphi, C++Builder, and Kylix. MyDAC is heavily performance- and stress-tested to provide the fastest available native connectivity to...

### Advanced Data Import VCL

Advanced Data Import VCL is a component suite for Borland Delphi and C++ Builder that allows you to import data from files of the most popular data formats to the database. You can import data from MS Excel, MS Access, DBF, XML, TXT, CSV, ODF and HTML....

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### dbExpress driver for SQL Server

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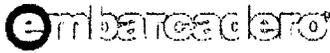
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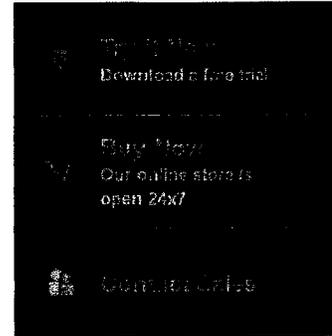
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## SQL profiling and tuning IDE

Embarcadero DB Optimizer maximizes database and application performance by enabling DBAs and developers to quickly discover, diagnose, and optimize poor-performing SQL.

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## DB Optimizer XE

Embarcadero® DB Optimizer™ XE is a heterogeneous tool that maximizes database and application performance by quickly discovering, diagnosing, and optimizing poor-performing SQL. DB Optimizer XE empowers DBAs and developers to:

- Eliminate performance bottlenecks by visually profiling key metrics inside the database (CPU, I/O, wait times)
- Relate resource utilization to specific queries, and helping to visually tune problematic SQL.
- Eliminate performance bottlenecks in production databases and applications
- Develop, test, profile, and tune SQL performance with a single, easy-to-use IDE across all databases

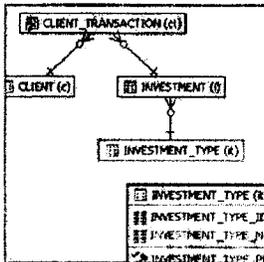
The XE family of products offer unique benefits at the most competitive price that you simply won't find in any other solution:

- True heterogeneous tool supporting all DBMSes from a single interface included in one product, one price, one license
- Run tools without installing locally; avoid conflicts when running multiple versions with Embarcadero® InstantOn™
- Centralized license management and tool deployment with Embarcadero® ToolCloud™

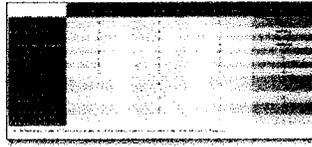
The new DB Optimizer XE Enterprise edition includes DB Performance Center XE. It is an advanced 24x7 monitoring option that leverages an agentless architecture, and includes customized alert thresholds, notifications, and escalations, as well as providing a unified view of the 'database health index' across both single and heterogeneous database environments. See all DB Optimizer XE editions.

### Feature Highlights

**Visual SQL Tuning (VST) Diagrams** – Taking SQL tuning beyond hints and SQL rewrites with new features for faster and more advanced tuning and analysis. New in DB Optimizer XE with enhanced statistics.



### DB Optimizer Product Editions Snapshot



#### Key Features:

- Graphical visualization of wait-time analysis
- Continuous profiling
- Batch tuning of DML statements, stored routines, entire SQL files
- Hint injection
- SQL rewrites
- Visual SQL Tuning (VST) diagrams
- Advanced index analysis with recommendations
- Robust reporting with execution statistics, profiling details, predicate analysis and explain plans
- SQL stress testing
- SQL IDE with code assist, error checking, debugging and real-time quick fixes

### DB OPTIMIZER XE HOME

- Data Sheet (PDF)
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- Now including DB Performance Center XE
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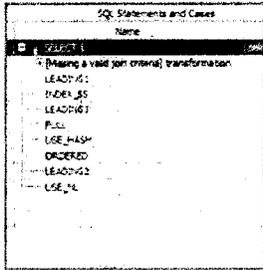
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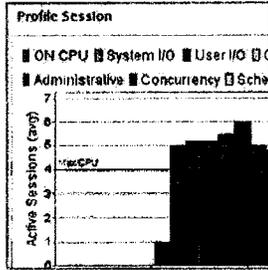
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**SQL Profiling, Tuning and Editing -**  
Quickly pinpoint poor-performing SQL  
code and optimize using a single, easy  
to use IDE



- Wait-time analysis
- Continuous profiling
- Hint injection
- SQL rewrites

**SQL Stress Testing –The Load Editor**  
stress tests SQL code to ensure  
performance gains are realized



- Simulate parallel users
- Measure over a set period of time or execution cycles

**Revision Information:**

- Current Version: XE
- Prior Version: 2.5.1
- Current Release: September 2010

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# DB Performance Center XE

24x7 Database Performance Monitoring

**embarcadero**



Embarcadero® DB Performance Center™ XE is a 24x7 monitoring tool that ensures maximum database availability and performance throughout your enterprise.

Configurable SQL capture, alert thresholds, notifications, and escalation paths allow administrators to access historical performance analysis data as well as identify and diagnose problems occurring in real-time throughout the enterprise.

- Monitor performance real-time, 24x7
- Customize alarm thresholds, notifications, and escalation paths
- Verify overall database health with the Health Index
- Create custom historical performance reports

## MONITOR PERFORMANCE REAL-TIME, 24x7

Database professionals need clear and concise methods to ensure the viability of every database they manage. DB Performance Center XE helps DBAs spot performance issues impacting an organization's bottom line. In real-time, DBAs can observe IBM® DB2® LUW, Microsoft® SQL Server, Oracle®, and Sybase® databases in a single view to see how databases are performing at any point in time. DBAs can then quickly drill down into every detail of a database's performance to determine the root cause of any response problems. Configurable SQL capture offers a pro-active approach by automatically triggering profiling sessions when a threshold has been violated.

With 24x7 coverage, performance issues are detected in real-time – before they threaten a database's health. DBAs can initiate an unattended, "lights out" monitoring schedule for early problem detection and notification. Blackout schedules will prohibit threshold checking during busy periods. You can also directly embed a stored procedure for dynamic stop-and-start data source monitoring into nightly backup scripts.

## CUSTOMIZE ALARM THRESHOLDS, NOTIFICATIONS, AND ESCALATION PATHS

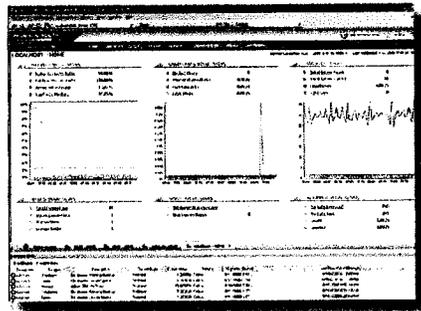
DBAs can customize DB Performance Center XE alerts to define how far in advance they want to be notified of problems, how they want to be notified, as well as who receives notification under specific conditions. DB Performance Center XE can also respond to database alarms by invoking a command line or SQL job to automatically fix the problem before database performance is adversely affected.

## VERIFY OVERALL DATABASE HEALTH WITH THE HEALTH INDEX

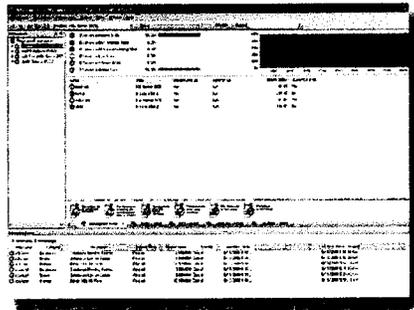
The Embarcadero Health Index is a single indicator that communicates the overall performance level of every monitored database. By sampling critical statistics such as memory, I/O, contention, space, network, objects, users, and SQL, DB Performance Center XE quickly determines a database's complete performance picture. You can customize each database's Health Index, establishing individualized thresholds and measurements that apply to each unique database scenario.

## CREATE CUSTOM HISTORICAL PERFORMANCE REPORTS

DB Performance Center XE offers a selection of reports that detail the global performance of all databases in an easy-to-understand format for CIOs, database managers, and DBAs. Historical reporting allows users to compare current performance to historical user-defined points in time. Flexible, concise reporting ensures that everyone responsible for critical application availability and performance stays informed.



Quickly navigate through key performance information for a single data source.



Enterprise View – Observe IBM DB2 LUW, Microsoft SQL Server, Oracle, and Sybase databases in a single view and drill down into every detail of a database's performance to determine root cause of each problem.

## Key Features

- Single interface for all major DBMS'
- Historical and real-time performance analysis
- "Health Index" at-a-glance performance indicator
- Detailed performance reporting
- Embarcadero® ToolCloud™ centralized license management and tool deployment
- Embarcadero® InstantOn™ – run tools without installation on local machine, run multiple versions without conflicts
- Easy upgrade to Embarcadero® All-Access™

Features	Description
Database Monitoring	
Unattended Monitoring ("Lights-out")	Early problem detection and notification
SQL Capture	Configurable 24x7 SQL text capture automatically triggers a SQL capture session when there is a threshold violation. Session profiles drill down into the SQL statements for detailed performance metrics
Database Home Page	Displays statistical performance and availability indicators for each database
Health Index	Monitors key performance indicators such as: memory, I/O, contention, space, network, objects, users, and SQL. Displays customizable, at-a-glance statistics.
Consolidated View	One view for all Oracle, Sybase ASE, IBM DB2 for LUW, and Microsoft SQL Server databases
Thresholds and Notifications	
Custom Thresholds and Notifications	Sets pager, email, and system broadcast notifications as well as who gets notified under specific conditions
Alarm Center	Pinpoints critical problems in the most visible databases and allows a view into all alarms for all databases regardless of platform in the enterprise.
Programmable Responses	Supports automatic scripted responses (command line or SQL job invocation)
Reporting	
Flexible Report Formats	Create tailored reports for CIOs, database managers, and DBAs
Export	Microsoft Excel and other formats
Integrates with Microsoft Task Scheduler	Enables report generation on a schedule
Historical Reporting	Creates a "worst databases" report with comparison features to measure historical performance
Installation	
Server-side	Does not install agents on the monitored machine; but installs objects and stored procedures on the machine
Web-based Interface	Browser-type navigation lets you move quickly between different monitored databases and statistics

#### DBMS Support

- IBM® DB2® for LUW 8.0 and 9.0
- Microsoft® SQL Server 2000, 2005 and 2008
- Oracle® 8i, 9i, and 10g
- Sybase® ASE 12.0, 12.5 and 15.0

#### System Requirements

DB Performance Center XE can monitor any data source regardless of the operating system platform. Embarcadero DB Performance Center XE requires the following:

##### Embarcadero Performance Center Server

- 250 MB of hard disk storage recommended
- 512 MB of RAM recommended
- Apache Version 2.2.6 (provided with install)
- Microsoft Windows 2000, Windows Server 2003, Windows XP, Windows Vista
- Database vendor-specific middleware for connectivity to repository and monitored data sources

##### DB Performance Center XE Client

- 75 MB of hard disk storage recommended
- 64 MB of RAM recommended
- Microsoft Windows 2000, Windows Server 2003, Windows XP, Windows Vista

##### DB Performance Center XE Repository

- Microsoft SQL Server 2000, 2005 and 2008
- IBM DB2 for LUW Version 8.2 and 9.0
- Oracle 8i, 9i, and 10g
- Sybase ASE 12.0, 12.5, and 15.0
- Default storage space of 75 MB. Large environments may require additional storage space.

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ID: 27398, Unicode Statistics Tool

by Anders Ohlsson Email: Anonymous

This utility will hopefully assist you in collecting useful statistics on how hard (or not) it would be to migrate your older applications to Unicode.

DOWNLOAD

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DETAILS

For Delphi, Version 1.0 to 14.0 1459 downloads Copyright: Open Source or other

Size: 626,941 bytes Updated on Fri, 09 Oct 2009 12:56:27 GMT Originally uploaded on Fri, 09 Oct 2009 12:56:26 GMT SHA1 Hash: CA3C43AD441527A91E1E20517F0E3882607B7756 MD5 Hash: A323A5DB22A96BFCE616DA767992D669

Explore the files in this upload

DESCRIPTION

Parser.exe is based on Jacob Thurman's work, and should support Pascal code all the way back to the early days. It may have some issues with some really old and esoteric syntax.

Please take it for a spin and give me some feedback. I'd like to know if it helps you, and if so - how? ;)

When you first launch the app, you will have to specify a directory where the source code you'd like to analyze lives. You can choose to process sub directories or not.

Hit "Process files" and let it run. You'll see the tool logging processed files as it goes.

If you run into an ERROR (it gives a line number) it most likely ran into some syntax that it doesn't like. Don't worry about that. At least not yet... ;)

Once finished, the treeview at the bottom will be populated. It'll list all used units (and how many times each one was used), number of files, number of lines, and number of instances of quite a few things that may or may not be interesting to you, such as String, Read, Write, SizeOf, etc.

Each node can be expanded and this is where it gets interesting. You'll notice number of instances of each token per file and as a percentage of all instances of that token found.

Should you be daring enough to want stats on your own custom tokens, feel free to put them in the box that says "GetTempFileNameA" and hit "Add Token". Nothing will happen quite yet. Add as many tokens as you want, hitting "Add Token" between each one. Then hit "Process files" again and you will get your custom stats added to the tree view.

Oh, BTW, "Save Report" simply saves a flat version of the tree view to a file.

Source code is included.

Good luck, enjoy, and let me know how it goes!

Thanks!

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Reply Posted by Rimvydas Paulavicius on Dec 17 2009

Unicode Statistics Tool

Parser hangs on this code: [CODE] {.\$R-,S-,Q-,V-,D-}

{-----} | Software Development -- PROGRAM SPECIFICATION ...

Reply Posted by Brad White on Dec 16 2009

Unicode Statistics Tool - review

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Server Response from: ETNACDC02

## ID: 19494, InterBase Performance Monitor 1.1



by **Craig Stuntz** Email: Anonymous

(Old version, get 7.5.1 now)  
 InterBase Performance Monitor is a free utility which assists in administering an InterBase server. Version 1.1 adds new features.

### DOWNLOAD

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CDN Login Required to Download. (You will be redirected to the login page if you click on the Download Link)  
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### DETAILS

For **InterBase**, Version **7.0** to **7.0** 2635 downloads  
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Size: **1,478,021 bytes**  
 Updated on **Thu, 22 Sep 2005 09:18:36 GMT**  
 Originally uploaded on **Fri, 24 Jan 2003 09:15:01 GMT**  
 SHA1 Hash: **827A58F3454C82D89D868BF44EF785108F980538**  
 MD5 Hash: **58DDE0399C6F60081AC5DC9D2A5EFCAG**

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#### DESCRIPTION

(Old version, get 7.5.1 now)  
 InterBase Performance Monitor is a free utility which assists in administering an InterBase server. The tool allows you to easily see (and optionally alter) who and what is consuming resources on your InterBase server.

The simple, graphical user interface allows you to view detailed statistics about the current database, memory use, attached users, transactions, tables, views, and stored procedures in use. You can drop a user, commit or roll back a transaction, or cancel a statement if you have the required privileges.

Version 1.1 adds many new features:

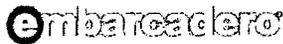
- \* Monitoring now uses less server resources.
- \* Memory tab can now display as a graph with history or a grid with more detail.
- \* Logging feature allows saving snapshots of DB/server state to tables in your database.
- \* Elapsed time column added to Statements and Transactions tabs.
- \* Added ability to display the InterBase.log file from the currently connected server and statistics from current database.
- \* Added preliminary Help.
- \* Improved icons and Windows XP support.
- \* A few bugs were fixed. The most important was fixing incorrect numbers appearing in the memory grid.

InterBase Performance Monitor requires InterBase 7, and only works with databases created/restored by InterBase 7.

For more information, see <http://blogs.teamb.com/craigstuntz/articles/InterBasePerformanceMonitor.aspx>

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## DBArtisan - Capacity Analyst

### Advanced Planning Analysis

Embarcadero Capacity Analyst collects historical database metadata and performance metrics at user-defined intervals. It provides historical trend analysis along with smart forecasting abilities that allow you to plan for the future needs of your critical databases. Running inside Embarcadero DBArtisan, Capacity Analyst presents a complete solution for day-to-day administration and historical analysis. It allows you to easily build complex trend analyses and forecasts through its intuitive interface so you know exactly where your databases are today and where they are headed in the future.

### Track Database Usage

Embarcadero Capacity Analyst helps you get a handle on database usage and performance trends by recording key database metadata and performance statistics so you can understand current trends as well as plan for the future. Wizard-driven facilities make creating statistical collections a breeze and built-in scheduling abilities allow you to run collections in off hours as often you desire.

- Create collections of database metadata and performance metrics that can be analyzed later with Embarcadero Capacity Analyst's Collection Wizard.
- Collect all pertinent information for your database's storage structures including total, used, and free space, along with other key storage metrics.
- Track key database object metrics including total and used object space, fragmentation information, and other key object-related statistics.
- Gather important wait event occurrences and times, which allow you to tell exactly what waits the database experienced, the duration of each wait, and when each occurred.
- Trace and analyze critical performance metrics like database I/O, session load, sort activity, and more.
- Schedule collections to run on an ongoing, automatic basis or collect them in an ad-hoc style.

### Analyze Trends

Embarcadero Capacity Analyst contains easy-to-use visual analysis facilities that help you instantly spot trends in database usage and activity.

- Review summarized metric information such as high, low, and average readings for the specified period.
- Add or remove metrics through the intuitive metric editor. Specify analysis period date ranges down to the minute and second level.
- Roll up key data by hours, days, months, or years using the granular rollup capabilities.

### Forecast the Future

Using historical Analysis, Embarcadero Capacity Analyst helps predict how much storage a database will require in six months and how it will impact performance.

- Create forecasts using the Visual Analysis facility or HTML reports.
- Specify a forecast in the Visual Analysis facility by simply selecting the option to view a forecast and typing in a date in the future.
- Step through the process of creating informative database forecast reports using the wizard-driven report utility.
- Forecast the growth of storage structures, predict fragmentation and growth trends for objects, and much more through the different storage and object-level reports.
- Upload HTML forecast reports to internal web sites for collaboration with management or operations personnel.

### Intelligent and Integrated Feature Set

Embarcadero Capacity Analyst is fully integrated into Embarcadero DBArtisan so you can perform all your storage management duties, as well as other cross-platform database work, in one place.

- Track and analyze all the key metrics for multiple databases all from within one console while continuing to perform other tasks within DBArtisan.
- Pinpoint upcoming space outages and then implement corrective actions using DBArtisan.
- Proactively forecast upcoming database needs and then implement the necessary database changes with DBArtisan.

### DBMS Support

- IBM DB2 for LUW 8.x and 9x
- Microsoft SQL Server 2000, 2005 and 2008
- Oracle 8i, 9i, 10g and 11g
- Sybase ASE 12.5 - 15.x

### System Requirements

- Windows® 2000, Windows 2003 (All editions), Windows 2003 R2 (All editions) and Windows XP (SP1 and SP2) and Windows Vista (Ultimate and Business) - 32-bit architecture only
- 512 MB memory
- 512 MB disk space
- DBMS Client connectivity utilities
- Internet Explorer 5.5 or later
- Power User or Administrator privilege required to run software

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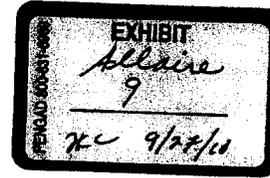
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## What is R?



### Introduction to R

R is a language and environment for statistical computing and graphics. It is a GNU project which is similar to the S language and environment which was developed at Bell Laboratories (formerly AT&T, now Lucent Technologies) by John Chambers and colleagues. R can be considered as a different implementation of S. There are some important differences, but much code written for S runs unaltered under R.

R provides a wide variety of statistical (linear and nonlinear modelling, classical statistical tests, time-series analysis, classification, clustering, ...) and graphical techniques, and is highly extensible. The S language is often the vehicle of choice for research in statistical methodology, and R provides an Open Source route to participation in that activity.

One of R's strengths is the ease with which well-designed publication-quality plots can be produced, including mathematical symbols and formulae where needed. Great care has been taken over the defaults for the minor design choices in graphics, but the user retains full control.

R is available as Free Software under the terms of the Free Software Foundation's GNU General Public License in source code form. It compiles and runs on a wide variety of UNIX platforms and similar systems (including FreeBSD and Linux), Windows and MacOS.

### The R environment

R is an integrated suite of software facilities for data manipulation, calculation and graphical display. It includes

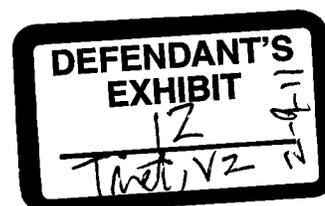
- an effective data handling and storage facility,
- a suite of operators for calculations on arrays, in particular matrices,
- a large, coherent, integrated collection of intermediate tools for data analysis,
- graphical facilities for data analysis and display either on-screen or on hardcopy, and
- a well-developed, simple and effective programming language which includes conditionals, loops, user-defined recursive functions and input and output facilities.

The term "environment" is intended to characterize it as a fully planned and coherent system, rather than an incremental accretion of very specific and inflexible tools, as is frequently the case with other data analysis software.

R, like S, is designed around a true computer language, and it allows users to add additional functionality by defining new functions. Much of the system is itself written in the R dialect of S, which makes it easy for users to follow the algorithmic choices made. For computationally-intensive tasks, C, C++ and Fortran code can be linked and called at run time. Advanced users can write C code to manipulate R objects directly.

Many users think of R as a statistics system. We prefer to think of it of an environment within which statistical techniques are implemented. R can be extended (easily) via *packages*. There are about eight packages supplied with the R distribution and many more are available through the CRAN family of Internet sites covering a very wide range of modern statistics.

R has its own LaTeX-like documentation format, which is used to supply comprehensive documentation, both on-line in a number of formats and in hardcopy.



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# Journal of Statistical Software

January 2009, Volume 29, Issue 4.

<http://www.jstatsoft.org/>

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## RinRuby: Accessing the R Interpreter from Pure Ruby

David B. Dahl  
Texas A&M University

Scott Crawford  
Texas A&M University

---

### Abstract

**RinRuby** is a Ruby library that integrates the R interpreter in Ruby, making R's statistical routines and graphics available within Ruby. The library consists of a single Ruby script that is simple to install and does not require any special compilation or installation of R. Since the library is 100% pure Ruby, it works on a variety of operating systems, Ruby implementations, and versions of R. **RinRuby**'s methods are simple, making for readable code. This paper describes **RinRuby** usage, provides comprehensive documentation, gives several examples, and discusses **RinRuby**'s implementation. The latest version of **RinRuby** can be found at the project website: <http://rinruby.ddahl.org/>.

*Keywords:* R, Ruby, JRuby, Java, **RinRuby**.

---

### 1. Introduction

Scripting languages such as Ruby, Python, Perl, and PHP are increasingly popular since they can greatly decrease development time compared to traditional languages, such as C, C++, and Java. Although many variations exist, scripting languages are high-level programming languages that typically avoid explicit type declarations, interpret or compile code at runtime, and focus on simplicity and productivity rather than raw execution speed. Scripting languages have been particularly successful in tasks such as data extraction, web development, prototyping, report generation, and combining existing software to accomplish a task.

Ruby is a dynamic scripting language "with a focus on simplicity and productivity. It has an elegant syntax that is natural to read and easy to write" (Flanagan and Matsumoto 2008). Ruby supports features such as pure object orientation, closures, and mix-ins. Several implementations are available, the most mature being the reference C implementation, JRuby (which runs on the Java Virtual Machine), IronRuby (which runs on the .NET Framework), and Rubinius (an alternative implementation written in Ruby and C). Unfortunately statistical

analysis routines and graphing abilities are quite limited in Ruby.

R is a scripting language and environment developed by statisticians for statistical computing and graphics with a large library of routines (R Development Core Team 2008). R has many contributors and a large user base which increases confidence in the correctness of the implementation. The graphing abilities of R are excellent.

This paper describes the **RinRuby** software, a 100% pure Ruby library that provides a simple but effective bridge to R from Ruby. Being 100% pure Ruby, **RinRuby** does not need to be recompiled with each incremental release of R and Ruby. It allows a statistician to leverage R's familiar and comprehensive statistical computing and graphics abilities in the powerful Ruby scripting language. (Note that **RinRuby** does not provide access to Ruby from R.)

**RinRuby**'s design allows R to be accessed from Ruby on any implementation of Ruby using a standard installation of R on any operating system capable of running R and Ruby (including Linux, Mac OS X, and Microsoft Windows). This means there is no need to install Ruby or R with special options. Using **RinRuby** in JRuby, for example, allows for seamless integration of Ruby, Java, and R code in one application.

The paper is organized as follows. Section 2 introduces **RinRuby** basics, including installation and typical usage. An example using the Gettysburg Address is given in Section 3. Section 4 discusses approaches to making R accessible in a scripting language and details the technique used by **RinRuby**. Comprehensive documentation is provided in Section 5, while Section 6 discusses a few caveats related to **RinRuby** usage. The appendix contains two examples: our **RinRuby** translation of Tim Churches' demonstration of **RPy** (a similar program that makes R accessible within Python, see Moreira and Warnes 2008) and an example involving simple linear regression. The scripts for all the examples are available online along with the paper.

## 2. Using RinRuby

### 2.1. Installation

A prerequisite for **RinRuby** is a working installation of R, but no special compilation flags, installation procedures, or packages are needed for R. If using the RubyGems system, **RinRuby** can be installed by simply executing the following at the operating system's shell prompt (denoted \$):

```
$ gem install rinruby
```

This will download and install the latest version of **RinRuby** from RubyForge (<http://rubyforge.org/>), an archive of Ruby extensions analogous to the Comprehensive R Archive Network for R. The equivalent call for JRuby is:

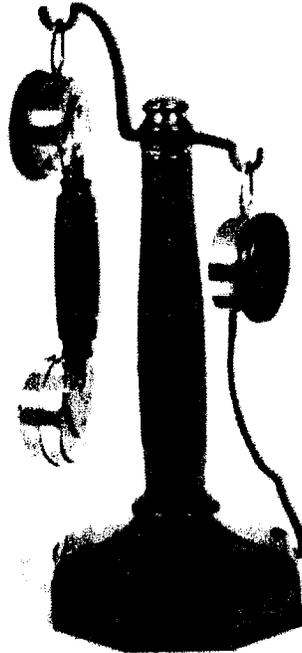
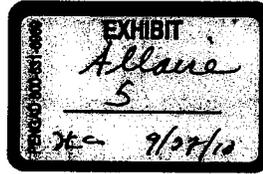
```
$ jruby -S gem install rinruby
```

If RubyGems is not available, the latest version of the `rinruby.rb` script can be downloaded from the **RinRuby** webpage (<http://rinruby.ddahl.org/>) and placed in a directory in Ruby's search path (as given by the array \$:).

R vs RVS?

WEDNESDAY, JUNE 16, 2010

## Calling Ruby, Perl or Python from R



If you want to interact with other programming languages from R, there are various packages and bindings available. These packages provide a pretty high degree of integration between the languages and allow you to pass objects back and forth seamlessly. The downside is that you need to have the time, security rights and correct installation sequences available to complete the compilation and installation.

A quick and easy way to return a string from an external program or scripting language is to call the `system` function. As you can see from the examples, you must set `intern=TRUE` to pass the value back into the R environment. In addition, the value being passed into R is being redirected from `STDOUT`, so you have to use an appropriate command in your script to effectively return the result.

```
x=system('ruby -e "puts 1+1"', intern=TRUE)
x=system('perl -e "print 2 + 4"', intern=TRUE)
x=system('C:\\jython2.2.1\\jython -c "print 1+3"',
intern=TRUE)
```

Obviously not a great approach for a full blown application, but a good

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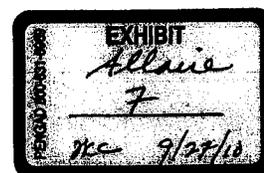
RSRuby is a bridge between Ruby and the R interpreted language. When RSRuby is called in a Ruby script, a full R interpreter is embedded into the Ruby interpreter, allowing the Ruby script to call functions from any R library the user wishes.

- Development Status: 3 - Alpha
- Intended Audience: Developers
- License: BSD License
- Natural Language: English
- Operating System: OS X, POSIX
- Programming Language: C, Other, Ruby
- Topic: Mathematics

### Developer Info

Project Admins:  
Alex Gutteridge

Developers:  
2 [View Members]



Registered: 2006-07-10 21:38  
Activity Percentile: 67.11%  
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### Latest File Releases

Package	Version	Date	Notes / Monitor	Download
<b>rsruby</b>	0.5.1.1	February 11, 2009	-	Download

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Patch Tracking System

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Feature Request Tracking System

Public Forums ( **174** messages In **2** forums

### Latest News

**rsruby version 0.4.2 has been released**  
**Alex Gutteridge - 2007-01-19 01:47**  
(0 Comment) [Read More/Comment(0)]

**Initial RubyForge Release**  
**Alex Gutteridge - 2006-07-14 18:12**  
(0 Comment) [Read More/Comment(0)]

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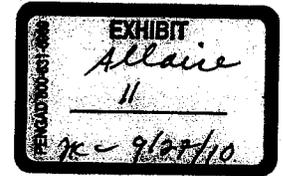


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Revolution R Community: 100% R and More

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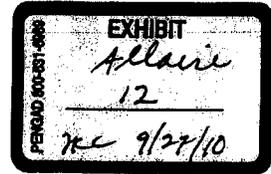
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- **64-Bit Scalability:** Analyze larger data sets on 64-bit Windows, taking full advantage of your equipment's RAM.
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- **Parallel Processing Power:** Significantly reduce computation time for simulations, optimizations, segmented data analysis and more.
- **Big Data Analysis for Terabyte-Class File Structures**—A comprehensive solution that provides fast, scalable statistical analysis of large data sets without the RAM barrier of standard R. Combines external memory algorithms, distributed parallel computing, high performance data access and an extensible framework to deliver new levels of capacity and speed for analyzing Big Data with R. [Read more here.](#)
- **Enterprise-Class Application Integration, Deployment & Administration for R**—new Web Services framework that integrates dynamic R-based computations into applications for business users. [Read more](#)
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## Dana Gardner's Instablog



Revolution Analytics targets R language, platform at growing need to handle 'big data' crunching 0 comments

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**R**evolution Analytics is working to revolutionize big data analysis with better crunching tools and an updated platform that brings the open source R statistics language to some the the largest data sets.

The company is betting its new big data scalability platform will help R transition from a research and prototyping tool to a production-ready platform for such enterprise applications as quantitative finance and risk management, social media, bioinformatics, and telecommunications data analysis.

The latest version of Revolution R Enterprise comes complete with an add-on package called RevoScaleR, a framework for multi-core processing of large data sets. With RevoScaleR, Revolution Analytics targets some of the largest levels of capacity and performance for analyzing big data, they said.

"With RevoScaleR, we've focused on making analytical models not just scale to the big data sets, but run the analysis in a fraction of the time compared to traditional systems," says David Smith, vice president of Community and Marketing at Revolution Analytics. "For example, the FAA publishes a data set that contains every commercial airline take off and landing between 1987 and 2008. That's more than 13 gigabytes of data. By analyzing that data, we can figure out the likelihood of airline delays in one second."

### A rows-and-columns approach

**O**ne second to analyze 13 GB of data should turn some heads because it takes 300 seconds with traditional methods. Under the hood of RevoScaleR is rapid fire access to data. For example, the RevoScaleR uses an XDF file format, a new binary big data file format with an interface to the R language that offers high-speed access to arbitrary rows, blocks and columns of data.

"The new SQL movement was all about going from relational databases to a flat file on a disk that offers fast to access by columns. A lot of the technology that's behind things like Twitter and Facebook take this approach," Smith said. "We've taken that one step further to develop a system that accesses the database by rows and columns at the same time, which is really well-attuned to doing these statistical computations."

RevoScaleR also relies on a collection of the most-common statistical algorithms optimized for big data, including high-performance implementations of summary statistics, linear regression, binomial logistic regression and crosstabs. Data reading and transformation tools let users interactively explore and prepare large data sets for analysis. And, extensibility lets expert R users develop and extend their own statistical algorithms.

### Integrating Hadoop

**B**ased on the open-source R technologies, Revolution R Enterprise accordingly plays well with other modern big data architectures. Revolution R Enterprise leverages sources such as Hadoop, NoSQL or key value databases, relational databases, and data warehouses. These products can be used to store, regularize, and do basic manipulation on very large data sets—while Revolution R Enterprise now provides advanced analytics.

"Together, Hadoop and R can store and analyze massive, complex data," says Saptarshi Guha, developer of the popular RHIFE R package that integrates the Hadoop framework with R in an automatically distributed computing environment. "Employing the new capabilities of Revolution R Enterprise, we will be able to go even further and compute dig data regressions and more."

The new RevoScaleR package will be delivered as part of Revolution R Enterprise 4.0, which will be available for 32-and 64-bit Microsoft Windows in the next 30 days. Support for Red Hat Enterprise Linux (RHEL 5) is planned for later this year.