

InterBase 5.5 Shines

Bill Karwin

This month InterBase Software Corp. released the most robust version of its database server product to date. The subtle but important new features and improvements to the RDBMS engine and client interfaces enable InterBase 5.5 to perform with greater reliability and speed than previous releases. This article discusses the principle features and enhancements in this release.

More stable, more robust

The primary goal of InterBase 5.5 was to correct all known severe defects. InterBase 5.5 meets this goal. The bug report form on the InterBase web site allowed InterBase users to help us identify and diagnose many specific defects. We also improved the testing methodology and introduced new 7x24 testing to ensure reliability in a demanding production environment.

We are proud of the improvements to the InterBase engine and we are confident that it will prove itself to be reliable to everyone's satisfaction and to live up to our slogan: *Embed. Deploy. Relax.*

The Release Notes included on the product CDROM list all bugs fixed in the version 5.0, version 5.1.1, and version 5.5 releases, with a brief description of each bug. You can also download the Release Notes from the InterBase web site.

New documentation

We produced a new edition of the InterBase manuals with many corrections and clarifications, in areas such as:

- UDF technology
- Date datatypes and the Year 2000
- Licensing and software activation keys
- NetWare and IPX/SPX network protocols
- Specification of the maximum index key size
- ODBC overview

Additionally, the digital documentation has been enhanced in the following ways:

- Hyperlinks are bold and in color
- The SQL reference and API reference are fully cross-referenced with clickable hyperlinks
- You can issue multi-book searches
- We have improved the InterBase SQL tutorial

The digital versions of these new manuals are on the InterBase web site.

The *Embedded Installation Guide*, a documentation supplement describing the details of programming your

continued on page seven

GBAK & COPY

Jule Potter

We all know that reliable backups are an excellent way to assure peace of mind for customers and database administrators. Unfortunately there are some misunderstandings about GBAK, the InterBase backup utility, and InterBase backups in general. The purpose of this article is to eliminate these misunderstandings.

When database administrators run their applications for more than a year with no backups, it can be difficult to convince them to do frequent backups with GBAK. It is, however, absolutely wrong to go without backups. The answer to how frequently backups should be done is related to the volume of business done on the database. In the business

continued on page six

CONTENTS	
InterBase 5.5 Shines	1
GBAK & COPY	1
Exporting a Table to File	2
Q&A: Mary Czaja	3
InterBase Pumps Up the Volume at ICon '98	4
InterBase In Action: The Hoehne Group	6
Redirecting Errors to a Text File	8

Exporting a Table to a File

James Arias-La Rheir

Exporting an internal table to a text file requires that a 'newline' column contain a carriage return. You could use a C/Delphi UDF to pass the ASCII character value (as a string) to the UPDATE statement, but there is a way using standard SQL.

STEP I. Add a Newline Column

Assume that the table you wish to export (TABLE1) has two fields (ID INTEGER, NAME VARCHAR(10)) and some existing data:

ID	NAME
101	Name1
102	Name2
103	Name3

The first step is to add a column to hold a NEWLINE character:

```
ALTER TABLE TABLE1 ADD NEWLINE  
CHAR(2);
```

STEP II. Create a Destination Table

The next step is to create an external table that will hold the final exported data. The fields must correspond to those of the table to be exported (including the newly added NEWLINE field), be of type CHAR and wide enough to hold the the existing data:

```
CREATE TABLE T1_EXT EXTERNAL  
FILE "C:\T1_EXT.TXT"  
(ID CHAR(3), NAME CHAR(10),  
NEWLINE CHAR(2));
```

STEP III. Create a Newline Text File

Next create a text file (with an ASCII text editor such as Notepad) that contains a single carriage return. In this example assume that I have

named this file "C:\NL_EXT.TXT". Now the text file must be associated with the database. The following CREATE statement will add the appropriate information to the database's system tables for later access:

```
CREATE TABLE NL_EXT EXTERNAL  
FILE "C:\NL_EXT.TXT"  
(NEWLINE CHAR(2));
```

STEP IV. Inserting a carriage return

First, take a look at what table TABLE1 consists of:

```
select * from TABLE1
```

ID	NAME	NEWLINE
101	name1	<null>
102	name2	<null>
103	name3	<null>

Then you issue the following SQL statement that takes the carriage return value in the newline external file (NL_EXT) and updates the NULL newline column in the internal table (TABLE1) with it.

```
update TABLE1 set newline =  
(select newline from NL_EXT)
```

Now TABLE1 has:

```
select * from TABLE1
```

ID	NAME	NEWLINE
101	name1	
102	name2	
103	name3	

Notice that the NULL is missing from the NEWLINE column. That is because it now contains a carriage return. Also note the carriage return value takes two characters on Windows platforms and one on UNIX.

STEP V. Exporting to an external file

The final step is to issue a simple INSERT statement to move the data from the internal table to the external file:

```
insert into T1_EXT (ID, name,  
newline)  
select CAST(ID as char(4)),  
cast(NAME as char(10)),  
NEWLINE from TABLE1
```

Note that the ID column in T1_EXT was a CHAR and you had to use the CAST operator to move the numeric value to the external file. You also had to use the CAST operator with the NAME column for a similar reason: InterBase requires that columns in an external file to be of a fixed length.

And now to see how the data went over?

```
select * from T1_EXT
```

ID	NAME	NEWLINE
101	name1	
102	name2	
103	name3	

James Arias-La Rheir is a Technical Support Engineer at InterBase Software Corporation.

Interested in contributing to future InterCom issues?
Have a suggestion for an article you'd like to see?
Like to talk about your experiences with using InterBase as a backend to your application?

Contact Amelia Arnett at
1-888-345-2015 x6506 or
aarnett@interbase.com

Q&A: Mary Czaja

Each issue of *Intercom* features an interview with a key personality. This month we interview Mary Czaja, Program Manager.

I've heard of Project Managers, but what is a Program Manager?

A program is made up of multiple projects. The role of the Program Manager is to look at the big picture. I manage the integration of Engineering, QA, Publications, Support, Marketing, Manufacturing, and so on for product releases. I plan the release schedules and track everything that goes in the box, on the box, and the box itself. I lead a cross-functional Core Team that represents all of the release stakeholders. We manage and track the release process.

Does InterBase have a formal release process?

Yes, we use PACE (Product And Cycle-time Excellence), a four-phased product lifecycle methodology. I work with all of InterBase to ensure consistent use of PACE. Our release process is the foundation for a quality product. We are held to requirements from product conception through launch and track our progress against milestones set by the process. As we grow as a company, the release process will grow with us. We do not want process for process' sake, but to ensure quality through consistent, repeatable release practices.

How many products have you released at InterBase?

5.5 is my first InterBase release! I came to InterBase in April, by way of PeopleSoft. Prior to that I spent four years with Sybase. My background of database release management and



Mary Czaja is the Program Manager for InterBase Software Corporation.

quality process improvement work were a good fit with the opening InterBase had. I was looking for a dynamic environment in a growing company. After six months I can say that I made the right decision. InterBase has great technology, the best team possible, and a strong foundation for growth.

As InterBase grows, how will the process grow?

InterBase now has over 55 employees. Each one is an important part of the big picture and needs access to our product lifecycle process. One improvement in the works is the upgrade of our intranet site. All of our templates, guidelines, and instructions for creating product will be accessible by phase. The output, or release-specific documentation, will be indexed under the release code name. After the product is released to manufacturing, its

entire history will be archived. As new employees come on board they will be able to look at one place for all the information needed to do their job. All functional information will be indexed on the intranet site also. Information will be shared across functions. Due to our small size, this level of accessibility will allow us to function in accordance with the PACE requirements even if key players are absent.

What do you see as your biggest challenge going forward?

It is important that we not become process heavy. In order to meet the needs of the market we must be able to turn on a dime. InterBase is a dynamic environment to create in, and as we grow, we must be careful to carry that forward. My quarterly goal is to learn all of the InterBase acronyms such as .gds, jrd, and XSQLDA.

InterBase Pumps Up The Volume At ICon '98

Amelia Arnett

InterBase returned to ICon this year with a stronger presence than ever before. InterBase sponsored its own track this year with popular sessions and incredibly positive feedback (papers from the InterBase track are being posted to www.interbase.com as they become available). We had a larger booth at the show than we have had in the past, which featured a video of customer testimonials and a giveaway item, InterBase The Card Game. The game is based on InterBase and involves building a database with the data you need before your opponent gets what they need.

We also made some announcements at the show that were overwhelmingly popular. InterBase announced its new Partner Program,



and InterBase 5 for Linux, making it the first major database to port to this platform.

Thank you everyone who came by our booth or attended our sessions at the conference for helping to make

the show a success. We are already hard at work planning next year's ICon and we will look forward to seeing you all in Philadelphia!

Amelia Arnett is the Associate Marketing Communications Manager at InterBase Software Corporation.



Technical Support team spirit shines through at "Meet the Team." L-R: Chip Handley, Client Services Manager; Brett Bandy, Sr. Tech. Support Engineer; James Arias-La Rheir, Tech. Support Engineer; Jenny Li, Tech. Support Engineer; and Markus Kemper, Client Services and Sales Engineer.



Scott Schnaars, Senior Sales Executive, takes a break during a quiet moment.



Jenny Li, Markus Kemper, Shaunak Mistry, and Greg Deatz (Icon '98 Attendee and Outside Speaker for the InterBase Track) find time for a cold one after a hard day at the conference.



Jim Weil (InterBase President), Rick LeFavre (Senior Vice President of R&D, Inprise), and John Floisand (Senior Vice President of Worldwide Sales, Inprise)



The InterBase team mugs for the camera. Top row (L-R): Mike Tossy, Director of Strategic Planning; Bill Karwin, Technical Publications Manager; Brett Bandy, Sr. Tech. Support Engineer; Jim Weil, President; Paul Beach, Director of Business Development; Joe Alfaro, Director of R&D; Alison McEwen, CFO. Bottom row: Shaunak Mistry, Senior R&D Engineer; James Arias-La Rheir, Tech. Support Engineer; Elizabeth Marsh, Sales Representative; Markus Kemper, Client Services and Sales Engineer; Amelia Arnett, Associate Marketing Communication Manager; Scott Schnaars, Senior Sales Executive. Not pictured: Ravi Kumar, Senior R&D Engineer; Jenny Li, Tech. Support Engineer.



The InterBase booth featured demonstrations by our customers of their products. Pictured here is Victor Steeb of Micro Software Services, Inc. demonstrating Air Manifest, an application for cargo shipping and customs conformity.

GBAK & COPY

continued

critical environment where InterBase excels, a weekly backup with GBAK should be a minimum.

A common question is, “Why do I need GBAK when COPY seems to work, and is COPY quicker than GBAK?”

COPY seems to fit with InterBase. Just like InterBase, COPY is quick and easy to use, it doesn't interfere with the work of other users, and it is available on a variety of platforms. So it sounds like COPY would work for backups.

It almost does.

The problem with COPY is related to the InterBase versioning engine. The versioning engine of InterBase maintains a unique virtual database for every user. Since every user works on their own version of the database there is very little content on for data. The work of maintaining multiple versions is done by InterBase.

If you use COPY as a backup utility, it has no capability of distinguishing between versions and records. COPY simply reads what is on the disk. There is a real possibility that a COPY of an InterBase database will have inconsistent or corrupt data. A GBAK of any database, even a live database, is a complete and safe archive of the data.

Doing a GBAK of a live database makes sense because GBAK operates just like any other database user. When GBAK connects to a database it operates in the scope of a transaction like all other users. Therefore GBAK has the advantages of every InterBase user – it is safely

isolated from other transactions, and it has a complete view of the data at that point in time. COPY does not.

COPY misses out in two other archival opportunities that GBAK catches – index optimization and reducing the size of the database.

One good way to optimize an index is to build it from scratch. That's how GBAK does it. GBAK doesn't even back-up existing indexes. Instead it creates them from scratch during the restore process. The creation of indexes often takes a large part of the time required to restore a GBAK archive. A COPY is faster because it spends no time optimizing indexes.

There is often a dramatic decrease in database size following a GBAK and restore. The decrease in database size comes from compression of the data and a reduction in the number of Transaction Information Pages (TIP). InterBase has automatic garbage collection but that still leaves holes in the database and these holes take up space. GBAK very effectively compresses those holes and returns the disk space to the customer.

So when can COPY be used safely as an archival utility?

If there are no users connected to the database, and the GFIX utility has been run to VALIDATE and FIX the database you can be confident of getting a good COPY. If you want to make sure you have a 100% accurate, 100% compressed, 100% optimized and reindexed database then you need to use GBAK.

Jule Potter is Technical Marketing Manager at InterBase Software Corporation.

InterBase In Action: The Hoehne Group

by Amelia Arnett – from the press release “InterBase at the Heart of the Hoehne Group Management+ Software”

The Hoehne Group Software Division, located in Park City, Utah, was founded in 1991 to provide financial services for the healthcare industry. Their product, Management+ medical practice management software, has become the most popular product in their industry. Management+ is used by over 200 leading physician's offices to reduce costs, improve efficiency, and more effectively use resources. The software seamlessly manages every aspect of a physician's office, including billing, claims, patient demographics, scheduling, medical records, inventory and reporting.

The Hoehne Group chose InterBase as the foundation for Management+ running on the Windows operating system. InterBase's ease of installation, use and maintenance made it ideal for a physician's office, where there are usually no IT staff available. “As a good consumer, we continually compare InterBase to its competition.” said David L. Hoehne, president and founder of the Moehne Group. “Exceptional price, performance, power and ease-of-use are the overwhelming reasons why we continue to choose InterBase over its competition. As a result, InterBase allows our system to maintain the feature-rich, user-friendly capabilities that are the benchmark of InterBase.”

5.5 Shines

continued

own InterBase installation application, is also available for free download on the InterBase web site.

New ODBC & InterClient drivers

InterBase 5.5 includes a new ODBC 3.0 driver from Intersolv. The driver is compliant with Microsoft's ODBC 3.0 standard, and has extensions to allow you to specify international character sets and SQL roles. It also supports Microsoft ASP and other products that require a thread-safe ODBC driver. The new driver also features improved performance, reliability, and support for Blobs.

The InterClient 1.5 JDBC driver is many times faster than the previous release. The new driver also supports user-specified international character sets, improved documentation, examples, and JBuilder integration.

UDF exception handling

An exciting new feature of InterBase 5.5 is the exception handler for User-Defined Functions. UDFs allow users to add functionality to the InterBase server with their own DLLs. InterBase 5.5 introduces exception handling for all UDFs. If your UDF raises an exception due to a defect, InterBase now has the ability to return a distinct error message. This is an effective development and debugging aid for identifying defects in UDFs before you deploy them in a production environment. UDF exception handling is currently implemented only in the Windows 95/Windows NT InterBase server.

Multiple platform support

Three InterBase 5.5 ports are available now—Windows 95 and Windows NT on Intel, Solaris on SPARC, and HP-UX. All InterBase client and server software is compatible. For example, a Win32 client can communicate with a Solaris server and vice-versa.

Other news

The InterBase setup application has been rewritten from scratch and makes installation much simpler.

If your UDF raises an exception due to a defect, InterBase now has the ability to return a distinct error message. This is an effective development and debugging aid for identifying defects in UDFs before you deploy them in a production environment.

GBAK has a new option *-buffers* that allows you to specify the database's default cache buffers as you restore. Also, GBAK preserves the original ownership of the database; in previous versions, the ownership

of a restored database and all its objects was assigned to the user who performed the restore.

Getting the product

InterBase 5.5 replaces InterBase 5.0 and 5.1.1, and all new purchases will receive version 5.5. To purchase InterBase 5.5, see www.inprise.com/wheretobuy for U.S. and international information on how to contact Inprise Sales.

We ship InterBase 5.5 automatically as a maintenance update to all existing customers who have a maintenance agreement. Maintenance is a great deal and easily pays for itself compared to the retail price of the product. You can purchase maintenance within 60 days of purchasing product. The total cost of maintenance is based on all chargeable components of the customer configuration: activation and user licenses in addition to the server software itself.

Other customers can purchase InterBase 5.5 at upgrade pricing, a discount off of retail in the U.S. You are eligible for this pricing if you already own InterBase software. Upgrade pricing will be applied to your existing configuration on a like-for-like, same-platform basis only. Additions to an existing configuration are considered new purchases, not upgrades, even when purchased at the same time as upgrades.

Outside the U.S., ask your regional Inprise salesperson for upgrade pricing details.

Bill Karwin is the Technical Publications Manager for InterBase Software Corporation

