Neue Features von Informix 11.70

Werner Tod

Manager DB2 for z/OS and Informix Development

IBM Deutschland Research & Development GmbH

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Agenda

Die Entwicklung von Informix bis heute

Informix 11.70 – Überblick über die aktuellen Features

Informix 11.70 – Was kommt denn da noch?

Die Entwicklung von Informix

2005

Optimized OLTP Engine

Query performance improvement

Online index build

Multiple page size support for better space utilization

Enhanced buffer management

Increased security with column encryption

Disaster recovery with table level restore

2007-2008

Scale-out at lower costs

Multi-node active cluster for high-availability (MACH) 11 with multiple remote servers and shared disk cluster

Open source tool for administration, SQL Admin API to embed admin tasks

Improved checkpoint performance

Secured data encryption, LBAC, Common Criteria certification

Enhanced application development for SOA and XML

Data Server Client

Text Search

2009

Business Optimization

Informix Warehouse

Cognos integration

Virtual Appliance

Cloud Computing support

Online Storage Optimization

XPS features

External Tables

In memory support with SolidDB

Heterogeneous Replication

3-D Internet collaboration

Delay/Stop Apply Cluster

4GL Enhancements

2010

Application Integration

Grid Computing

SOA in the Database

Enhanced Warehouse capabilities

Performance/Index advisor

More XPS Features

Deeper Embed

Automatic storage provisioning

Automatic Fragmentation

Embedability toolkit

Installation API

Oat Enhancements

Warehouse

Security

Fine-grained Auditing

Trusted contex

4GL Enhancements

Strategische Schwerpunkte bei 11.70

Fokussieren auf unsere Stärken:

- High Availability and Reliability
- Scale Out
- Ease of use
- Simple Administration
- Security
- Performance

… innerhalb der IBM-Strategie:

- Business Analytics and Optimization
- Smarter Planet
- Strengthen IBM's Mid-Market portfolio

Ziel: „Help our partners and customers WIN“

Die Umsetzung in den 11.70 Themes

Flexible Grid

Easy Embeddability

Expand Warehouse Infrastructure

Empower Application Development

Enhanced Security Management

Increased Performance

Flexible Grid – noch mehr Flexibilität für Ihre Informix-Infrastruktur

1. Install Informix on your server(s):

Servers may have secondary servers attached such as HDR, RSS, or SDS servers.

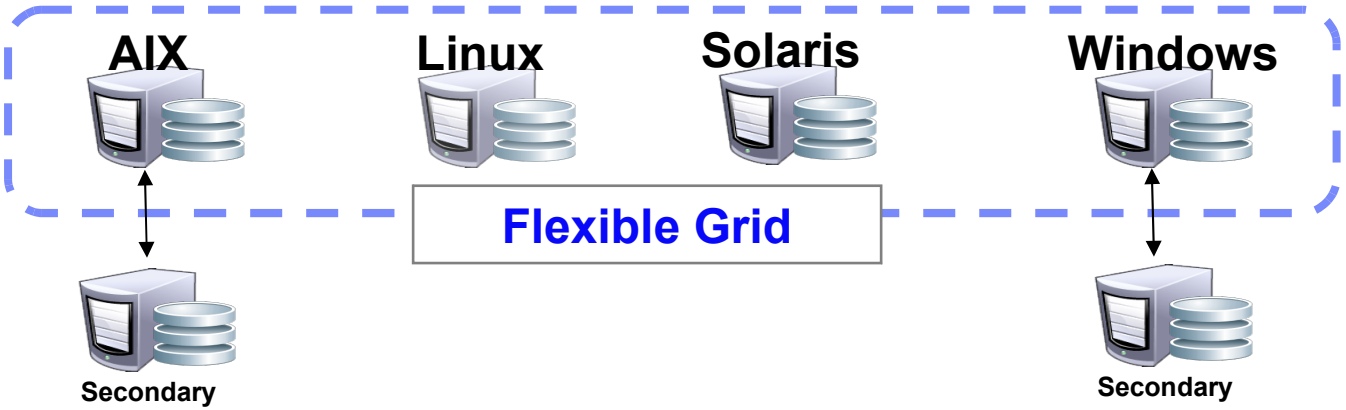
2. Define a grid to contain your servers:

Just give your grid a name and tell it the list of servers to use.

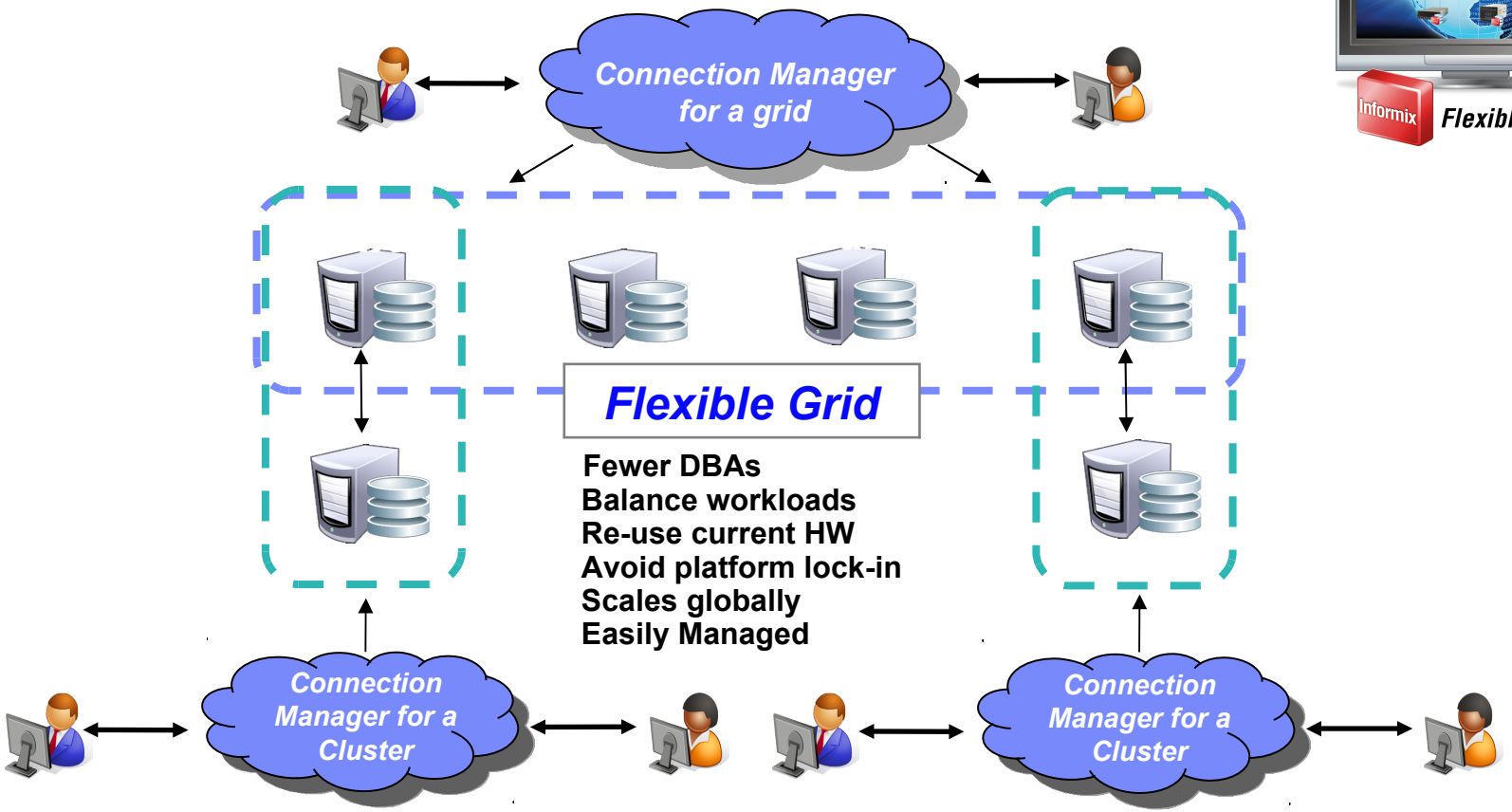
You can either use the Open Admin Tool graphical interface or a command line tool to define your grid.

Configure whether you want to replicate just schema changes or schema and data changes.

3. The grid is ready to use!



Flexible Grid – Workload Management



Easy Embeddability

Make it even easier for Customers to Embed IDS

Continue to enhance our core Strengths:

- Self Maintaining (e.g. automated storage allocation)
- Self Configuration (e.g. deployment assistant / utility)
- Self Healing (e.g. standardized error codes, internal error handling, automated datablade registration)
- Online operation (e.g. automated DB scheduler tasks)

Further reduce human & programmatic intervention required with IDS

Simplify installation > Informix Embeddability Toolkit

Expand Warehouse Infrastructure

Informix = OLTP + OLAP !!

Evolution von Informix, XPS und Redbrick hin zu einer konsolidierten Warehousing-Plattform

Explosion der Datenmengen + Steigende Bedeutung von Information vs. Daten

Gemischte Workloads auf einer Plattform + Wiederverwendung der existierenden Investitionen

Kosteneffizienz beim Auf- bzw. Ausbau der Warehousing-Kapazitäten

11.70 Warehousing Features

Data Loading	Data and Storage Management	Query Processing
HPL	Deep Compression	Light Scans
DB utilities	Interval and List Fragmentation	Merge
ON utilities	Online attach/detach	Hierarchical Queries
DataStage	Fragment level stats	Multi-Index Scan
External Tables	Storage provisioning	Skip Scan
Online attach/detach	Table defragmenter	Bitmap Technology
		Star and Snowflake join optimization
		Implicit PDQ
		Access performance

Query Tools

BI Applications

Kommende Warehouse Erweiterungen

NEU: Informix Warehouse + Informix Warehouse Accelerator

Empower Application Development

Stored Procedure Debugging:

- Integration with the Optim Data Studio procedure debugger.
- Integration with Microsoft Visual Studio debugger (post panther).

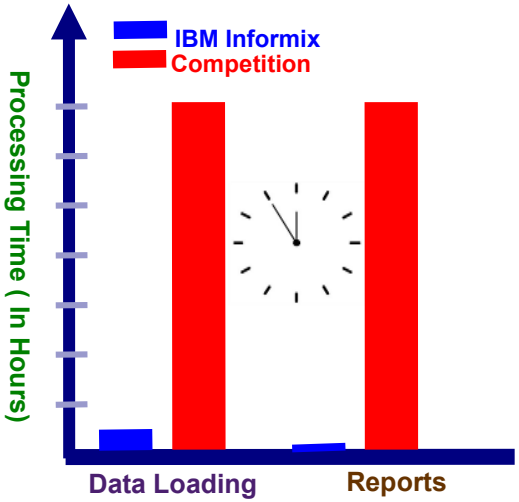
Improved compatibility with Open Source applications:

- Drupal, Hibernate, Geronimo, iBATIS, Mediawiki, Tomcat, Xwiki
- Available at the IIUG website (Software Repository) and IBM DeveloperWorks

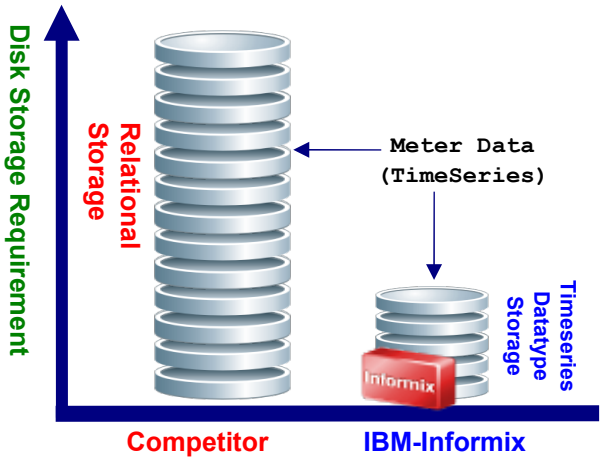
New SQL syntax added for compatibility

- As open source applications are ported syntax changes are made to accommodate those programs:
  - NULL clause now supported.
  - Relax the position of the default clause.
  - Relax the position of ON DELETE CASCADE.
  - Support for “if [not] exists”.
  - Expressions allowed as arguments to “count” aggregate.

Informix Timeseries included!



Performance Comparison for Data Loads and Reports for 1 Million Meters



Data Storage Comparison for 1 million meters

Based on actual benchmark test run for a large US electrical utility company

- Informix took ~ 18 minutes to load 1 day of data for 1 million meters; *The competitor took ~ 7 hours.*
- Informix took from 25 seconds to 6 minutes to run the utility commission reports; *The competitor took from 2 - 7 hours depending on the report.*
- Data space used by Informix is ~ 350GB; *The competitor uses about 1.3TB.*
- Informix performance and storage comparison is linear with more meter data.
- Informix gives even better results if you increase CPU's and storage.

Verbesserte Einbindung von 4GL-Anwendungen: Informix und IBM Mashup Center

```
                    CUSTOMER ORDERS
CUSTOMER
Customer Number:[      104]        Company Name:[Play Ball!        ]

ORDER NUMBER        ORDER DATE          PAID DATE           INSTRUCTIONS
1001                5/20/2008           7/22/2008           express
1003                4/22/2008           6/14/2008           express
1011                6/18/2008           8/29/2008           express
1013                6/22/2008           7/31/2008           express


Do you want to see another report? (n/y): _
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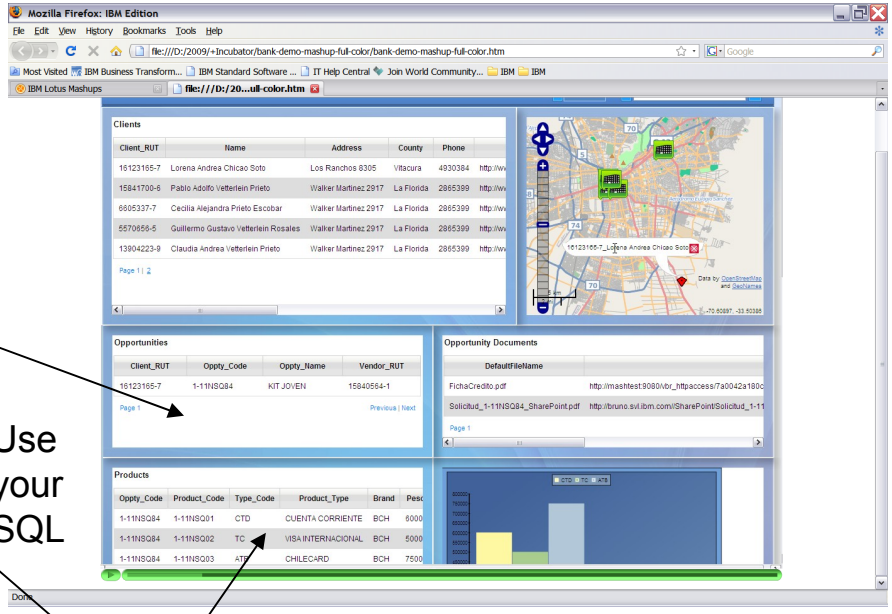
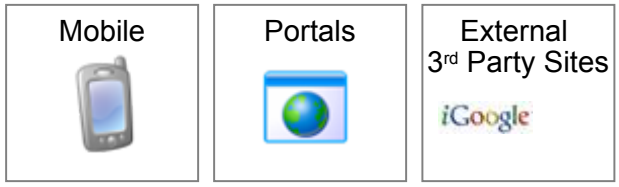


Use your SQL

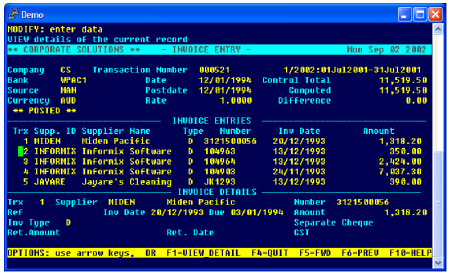


To take advantage of this, a customer needs to be current on both database and 4GL maintenance and upgrade to the latest versions.

Kommende Application Development Erweiterungen

IBM Informix Genero: complement existing Informix 4GL by allowing users to deploy existing and new applications in browser-based, GUI desktop, mobile and cloud environments

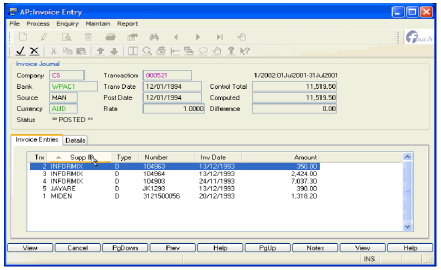
Informix 4GL



Current Informix 4GL offerings:

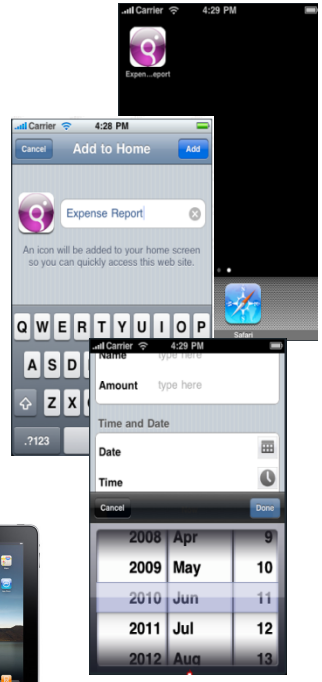
4GL Compiler Development
4GL Interactive Debugger
4GL Compiler Runtime
4GL RDS Development
4GL RDS Runtime

Informix Genero



New Informix Genero offerings:

Genero Developer Suite
Genero Runtime Suite



Enhanced Security Management

Selective row-level (SRL) Auditing:

- Allow customers to pick which tables and operations to audit.

Trusted Context:

- Trust user authentication done by middle tier applications.
- Allow these middle tier applications to switch users over an existing connection without shutting down the connection.

Support non-OS users:

- IDS users will no longer need to have a login on the host OS.

Encryption of raw disks via Encryption Expert:

- Encryption for regular file systems already supported.
- Vormetric currently supports only HP, but more platforms to be supported soon.
- Most Informix customers use raw disks.

Increased Performance

Implicit Parallel Data Query (PDQ)

Preloading of C-UDR Shared Libraries

Connectivity Performance Improvements (using cached connectivity information)

Allow multiple listener threads for an instance (up to 90% improved connectivity performance)

Linux Large Page Support (availble on AIX and Solaris before)

Preventing Accidental Instance Re-Initialization (using onconfig parameter)

Forest of Trees Indexes (reduce rootnode contention on small to medium sized tables)

Autonomics (e.g. Idle User Timeout, Bad Index Alert, AutoCompress / Repack / Shrink / Defrag, ...)

Informix Technical Roadmap – unsere Ideen

***Informix vNext+**

2012

Warehouse/BI improvements

Benchmarks

Embed SolidDB into IDS

Informix for Hadoop/Cloud

Informix for Handheld devices

4GL stored procedures

Support for multi-temperature data

Enhance Deep Embed

Enhance Industry Offering (Utilities)

***Informix vNext++**

2014

Distributed query processing

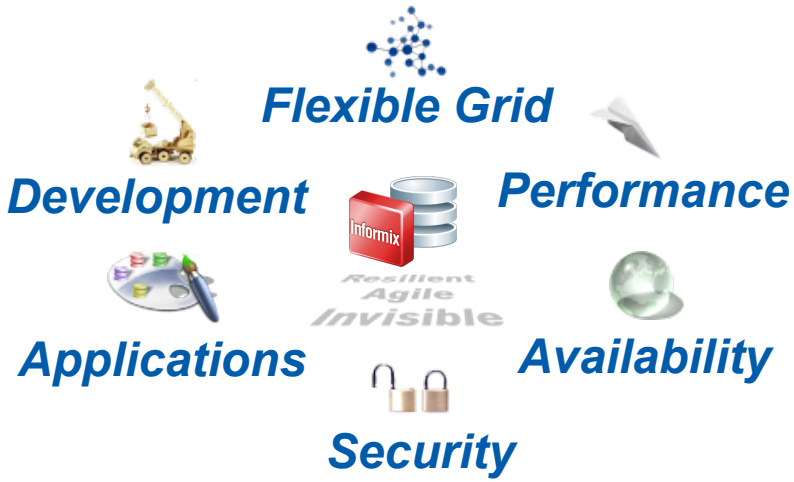
Materialized Query Tables

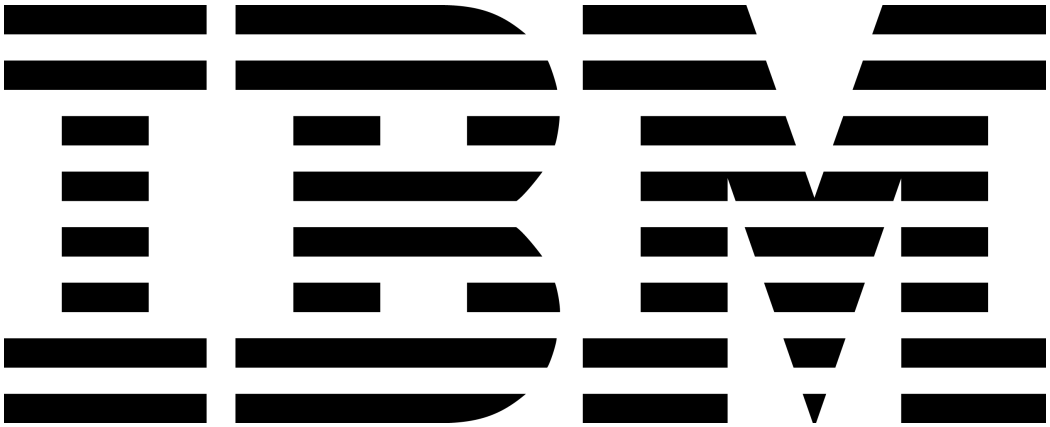
Extend Grid to non-database sources

***Informix vNext+++**

2016…

Continue to invest in Informix to increase its strengths and to open new markets

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