



GT.M Update

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AB FIS - FinTech100 - America
www.americanbanker.com/fintech100/rankings/1.html

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FINTECH100

TOP 100 COMPANIES IN FINTECH

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FIS
Jacksonville, FL

Payments

Core Processing

IT Services

FinTech Data

Previously Ranked	1
Ownership	Public
Total Revenue	\$5,808M
Financial Svcs. Revenue	\$5,111M
% Financial Svcs	88

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Company Info

FIS
Jacksonville, FL
<http://www.fisglobal.com/>

FIS offers payment processing and banking solutions, providing software, services and outsourcing of the technology that drives financial institutions.

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TOP 100 COMPANIES »

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ABOUT THE RANKINGS

The FinTech 100 and the Top 25 Enterprise Companies in FinTech are an annual ranking of the top technology providers to financial services companies worldwide. This special report is a collaboration of the editors at *American Banker* and *Bank Technology News* and the analysts and researchers at *IDC Financial Insights*. The rankings are researched and compiled by *IDC Financial Insights*. Public relations support is provided by *The William Mills Agency*.

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Bank IT Leaders Should Say No to 'Special Projects': First Niagara CIO

Top 10 FinTech Companies to Watch



Forbes Magazine Names F x

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Forbes Magazine Names FIS One of the World's 100 Most Innovative Companies

Key Facts

- FIS is the only U.S. FinTech 100 company included on Forbes 100 Most Innovative list.
- FIS named along with other notable innovative companies including Amazon, Apple, Google and Starbucks.

**Forbes | 2013
WORLD'S
MOST
INNOVATIVE
COMPANIES**

JACKSONVILLE, Fla., August 22, 2013 – FIS™ (NYSE: FIS), the world's largest provider of banking and payments technology, has been named by Forbes Magazine as one of the most innovative companies in the world, ranking No. 98 on Forbes' annual "World's 100 Most Innovative Companies" list.

"At FIS, we are shaping the future of banking and payments through the power of our portfolio. Our technology investments are moving the market, creating new mobile capabilities, advancing real-time payments and using active analytics to develop a more impactful financial services experience," said Gary Norcross, President and COO, FIS. "Financial institutions are constantly looking for new and innovative ways to

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OUR COMPANY

FIS Profile – in the Cloud



The screenshot shows a web browser window with the address bar displaying www.fisglobal.com/c024289. The FIS logo is in the top left, and a navigation menu includes Products, Services, Solutions, About Us, Contact Us, Login, and Global Sites. A search bar is in the top right. The left sidebar contains a menu with categories like AWARDS AND RECOGNITION, CAREERS, CLIENT SUCCESS, CONTACT US, EXECUTIVE BIOGRAPHIES, INVESTORS, MEDIA ROOM, and OUR COMPANY. The main content area features the headline "FIS Launches First Cloud-based, Real-time Core Banking Utility for Mid-tier Central and Eastern European Banks" in green. Below the headline is a "Key Facts" section with two bullet points: "FIS to launch its first cloud-based real-time banking utility utilizing award winning FIS Profile® in Central and Eastern Europe." and "Service will enable mid-tier banks to leverage real-time banking capabilities while controlling costs through a Software-as-a-Service (SaaS) model." The text continues with a dateline: "JACKSONVILLE, Fla., and Warsaw, October 7, 2013 - Providing mid-tier banks the ability to leverage real-time banking capabilities while controlling costs, FIS™ (NYSE: FIS), the world's largest provider of banking and payments technology, today announced the launch of its first cloud-based, real-time core banking utility for mid-tier banks in Central and Eastern Europe." The final paragraph quotes Jonathan Davis, Managing Director of Outsourcing, FIS, stating: "The world of banking is changing and we are seeing increasing demand for outsourcing and SaaS offerings," said Jonathan Davis, Managing Director of Outsourcing, FIS. "Mid-tier banks often find it difficult to build the investment case to upgrade their

FIS Profile – Bharatiya Mahila Bank



The screenshot shows a web browser window with the URL www.fisglobal.com/C025179. The page features a navigation bar with links: Products, Services, Solutions, About Us, Contact Us, Login, and Global Sites. A search bar is located on the right. On the left, a sidebar lists various sections: AWARDS AND RECOGNITION, CAREERS, CLIENT SUCCESS, CONTACT US, EXECUTIVE BIOGRAPHIES, INVESTORS, MEDIA ROOM (highlighted), and OUR COMPANY. The main content area displays the headline "Solution from FIS to Power India's First Women-focused Bank" in green. Below this, a "Key Facts" section lists four bullet points. At the bottom, a paragraph dated "JACKSONVILLE, Fla., and NEW DELHI, Nov. 18, 2013" describes the partnership between FIS and Bharatiya Mahila Bank Ltd.

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Solution from FIS to Power India's First Women-focused Bank

Key Facts

- Bharatiya Mahila Bank Ltd. is India's first women-focused public sector bank, created specifically to cater to the financial services needs of women.
- FIS will provide the bank's technology foundation including core banking, eBanking, and debit card and ATM servicing and processing.
- The bank's first seven branches will open in November 2013, a mere two months after the selection of FIS as the bank's technology partner.
- FIS is to deploy and manage the branch technology infrastructure supporting the bank's innovative branch strategy, bringing financial services to a broader customer base.

JACKSONVILLE, Fla., and NEW DELHI, Nov. 18, 2013 – Building on its reputation of delivering innovative solutions to address the needs of unique market segments, **FIS™** (NYSE: FIS), the world's largest provider of banking and payments technology, today announced it will power Bharatiya Mahila Bank Ltd., India's first women-focused public sector bank. Under the terms of the multi-year agreement, FIS will provide a fully integrated banking and payments platform through a totally outsourced delivery model encompass [core banking](#), channels, [trade finance](#) and the entire suite of payments services that includes [switching](#), [debit card management services](#) and ATM management.

FIS Profile – Sainsbury's



The screenshot shows a web browser window with the URL www.fisglobal.com/C022304. The page features the FIS logo at the top left and a navigation menu with links: Products, Services, Solutions, About Us, Contact Us, Login, and Global Sites. A search bar is located on the right. The main content area displays the headline "UK's Sainsbury's Bank Selects FIS as Retail Banking Technology Partner" in green. Below the headline, a "Key Facts" section lists two bullet points: FIS named as technology partner to Sainsbury's Bank, providing a fully outsourced real-time core banking solution, back-office processing and transition support; and Agreement underscores FIS' ability to deliver cost-efficient and next-generation financial technology services to the global marketplace. The text continues with a paragraph starting "JACKSONVILLE, Fla., and LONDON, May 8, 2013 – FIS™ (NYSE: FIS), the world's largest provider of banking and payments technology, has been selected by Sainsbury's Bank as the bank's technology partner for all its retail banking operations. Under the terms of this strategic multi-year arrangement, FIS will provide real-time core banking and back-office processing support via an outsourced model on behalf of Sainsbury's Bank." The page also includes a sidebar with links to Awards and Recognition, Careers, Client Success, Contact Us, Executive Biographies, Investors, Media Room (highlighted), and Our Company. The Media Room link is expanded, showing sub-links: Annual Report, FIS Facts, Image Gallery, News Releases, and Subscribe to News Updates.

UK's Sainsbury's Bank Sele x

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UK's Sainsbury's Bank Selects FIS as Retail Banking Technology Partner

Key Facts

- FIS named as technology partner to Sainsbury's Bank, providing a fully outsourced real-time core banking solution, back-office processing and transition support
- Agreement underscores FIS' ability to deliver cost-efficient and next-generation financial technology services to the global marketplace

JACKSONVILLE, Fla., and LONDON, May 8, 2013 – FIS™ (NYSE: FIS), the world's largest provider of banking and payments technology, has been selected by Sainsbury's Bank as the bank's technology partner for all its retail banking operations. Under the terms of this strategic multi-year arrangement, FIS will provide real-time core banking and back-office processing support via an outsourced model on behalf of Sainsbury's Bank.

Announcing its Preliminary Results today, J Sainsbury plc confirmed its intention to acquire the Lloyds Banking Group 50 per cent shareholding in Sainsbury's Bank. The announcement is the latest development in Sainsbury's overall strategy to help its customers to Live Well For Less and at the same time grow sales and profits from complementary new business channels by leveraging

EHS Continues Hakeem Rollout



Princess Badiya and Rahm x


www.ehs.com.jo/en/content/princess-badiya-and-rahma-hospitals-kick-meeting

Hospitals Kick-Off Meeting

Princess Badiya and Rahma Hospitals Kick-Off Meeting

Tuesday, January 1, 2013

A kick-off meeting was held on Sunday, January 13th at Princess Rahma Hospital premises in Irbid to launch the implementation of Hakeem program at Princess Rahma and Princess Badiya Hospitals. The project was launched under the patronage of the Ministry of Health in the presence of Dr. Ahmed Qutaitat the Director of Hospitals Management Directorate at the Ministry. The meeting was attended by Princess Rahma hospital GM Dr. Abdullah Al Sharman and Princess Badiya hospital GM Dr. Badri Al Momani and a large group of the hospital management and staff on the receiving end, EHS- CEO Eng. Rami Adwan, COO Eng. Feras Kamal, CMO Dr. Zeid Abu Ghosh, and a number of EHS project team members.



The purpose of this meeting was to officially kick off the project; as the assigned project manager to the two hospitals Mr. Omar Abu Rayyan who presented the project's scope of work, implementation methodology and the requirements in order to achieve the desired program benefits.

Dr. Al Sharman, Princess Rahma Hospital GM welcomed the attendees, praised the achievements of EHS and expressed the readiness of the two hospitals in partnership with Dr. Al Momani to provide all means of

Releases



- V6.0-003 & V6.1-000
 - Virtually unlimited global variable sizes
 - Another route to mapreduce / sharding
 - TCP over IPv6
 - Enhanced use of cryptography
 - Relink recursive
 - Local sockets (a.k.a UNIX domain sockets) for SOCKET devices
 - Pass a socket to child process with JOB command
 - Optimization for non-TP database reads, especially with thousands of concurrent processes
 - Nanosecond resolution timestamps (subject to OS accuracy) to determine whether source file is newer than object file

Virtually Unlimited Global Sizes



- Enabled by spanning regions (subscript level mapping) in global directories
- Map at any combination of levels, e.g.:

```
GDE> add      -name DIVISION("Europe", "a": "m")      -region EURAL
GDE> add      -name DIVISION("Europe", "m": "z")      -region EURMZ
GDE> add      -name DIVISION("Australia")             -region AUS
GDE> add      -name DIVISION("USA", "East")           -region USE
GDE> add      -name DIVISION("USA", "Mid", "a": "m")   -region USMAL
GDE> add      -name DIVISION("USA", "Mid", "m": "{")   -region USMMZ
GDE> add      -name DIVISION("USA", "West")           -region USW
```

- Ranges closed on left and open on right

```
GDE> add      -name PRODAGE(0:10)                     -region DECADE0
GDE> add      -name PRODAGE(10:20)                   -region DECADE1
GDE> add      -name PRODAGE(20:30)                   -region DECADE2
```

- Consistency of multi-region operations (e.g., \$ORDER(), KILL) assured with TP logic
- (Triggers not yet supported for global variables that span regions; coming soon)

Another Route to mapreduce



- (All those interested in mapreduce and sharding applications with GT.M, let's find a time & place to huddle)

TCP over IPv6



- Mostly, Just Works™ for SOCKET devices, replication, backup
 - Encapsulate IPv6 addresses with [] for CONNECT deviceparameter (IPv4 also now optionally permits [])
 - Have different names for IPv4 & IPv6 addresses (GT.M uses the first protocol returned by DNS)
 - LISTEN/ZLISTEN accepts connections from both IPv4 & IPv6 connection requests
 - (Replication with older GT.M releases must ensure use of IPv4)

Enhanced Use of Cryptography



- TLS (SSL) for replication
 - GT.M Cryptography plugin API and reference implementation enhanced for TLS (requires certificate management)
 - OpenSSL - <http://openssl.org> - used for TLS (GT.M includes no cryptographic software)
 - New configuration file format to manage certificates & encryption requires libconfig - <http://www.hyperrealm.com/libconfig/> - a standard library available via your package manager (current \$gtm_dbkeys continues to work when only database encryption needed)
- Easier path to certification for compliance with FIPS 140-2
 - Requires OpenSSL or libgcrypt () installation which is certifiably FIPS 140-2 compliant
 - With environment variable gtmcrypt_FIPS set to 1, "yes", or "true" reference implementation of encryption plugin uses library in FIPS compliant mode
 - FIPS Certification involves software and processes (see implementation guidelines at <http://csrc.nist.gov/groups/STM/cmvp/documents/fips140-2/FIPS1402IG.pdf>)

Recursive Relink



- Long running processes always have M routine references on the invocation stack
- Existing ZGOTO 0:<entryref> works but is heavyweight and some application redesign needed
- Recursive relink allows new version of a routine to be ZLINK'd with a reference to an existing version on the M invocation stack
- Any DO, function call, GOTO or ZGOTO of a full entryref invokes the new routine (DO, function call, GOTO or ZGOTO of a label is always in the same routine as the caller)
- After QUIT from an old version (or last invocation of old version if recursively called), old version becomes inaccessible
- ZSHOW "R" displays routine stack with MD5 hashes of each routine's source code

And More...



- (Including enhancements and bug fixes)



Thank You

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