TigerGraph
The Only Scalable Graph Database for The Enterprise
A graph database is designed to facilitate analysis of relationships in data. A graph database stores data as entities and the relationships between those entities. It is composed of two things: vertices and edges. Vertices represent entities such as a person, product, location, payment, order and so on; edges represent the relationship between these entities, for example, this person initiated this payment to purchase this product with this order.

Graph analytics explores these connections in data and reveals insights about the connected data. These insights can help prevent fraud, enable better product recommendations or help improve supply chains.

TigerGraph is the only scalable graph database for the enterprise. TigerGraph architecture allows siloed data sets to be connected for deeper and wider analysis at scale. Additionally, TigerGraph supports real-time in-place updates for operational analytics use cases. These capabilities enable applications such as AI/ML, entity resolution, fraud detection, customer 360, hyper-personalized recommendations, and more: TigerGraph is focused on accelerating advanced analytics, AI and machine learning projects with graph algorithms.

The most innovative organizations are using TigerGraph to accelerate advanced analytics, AI and machine learning applications:

- Four of the top five global banks use TigerGraph for real-time fraud detection and risk management.
- More than 50 million patients receive care path recommendations to assist them on their wellness journey.
- Over 300 million consumers receive personalized offers with recommendation engines powered by TigerGraph.
- One billion people depend on the energy infrastructure optimized by TigerGraph to reduce power outages.

**TigerGraph Benefits**

**Maximum Price Performance**—TigerGraph uses MPP architecture to uniformly utilize resources based on workload needs to deliver ROI

**No limits on scalability**—TigerGraph is designed to scale to Petabytes. Customers can future-proof their investment even if the use case needs grow exponentially.

**Richer data context for applications**—with TigerGraph, users can perform wider and deeper analysis of data and uncover hard-to-find patterns.

**Flexibility to run AI workloads**—TigerGraph provides extensive in-database machine learning capabilities. If the users prefer, TigerGraph can help with feature extraction and expedite ML training in other downstream systems.
TigerGraph is the only scalable graph database for the enterprise. TigerGraph is a third generation distributed graph database with six key facets:

**Deep Link Analysis & Real-time Performance**
- Sub-second response for queries touching tens of millions of entities/relationships
- 5-10+ level deep queries with complex calculations

**Advanced Analytics & Machine Learning**
- User extensible graph algorithms library
- In-database machine learning
- Graph-based feature generation for supervised machine learning

**Transactional (Mutable) Graph**
- Hundreds of thousands of updates per second
- Billions of transactions per day

**Ease of Development & Deployment**
- GraphStudio - visual SDK
- GSQL - Intuitive, Turing complete graph query language
- Automatic partitioning and distributed queries for large datasets (terabytes)

**Scalability for Massive Datasets**
- 100 B+ entities
- 1 Trillion + relationships
- Tens of terabytes in production

**Enterprise Grade Security**
- Encryption at-rest and in-transit
- Control access to sensitive data based on user role, dept or organization with MultiGraph

“TigerGraph is an absolutely phenomenal product on which we essentially built everything.”

Edward Sverdlin, Vice President, Advanced Technology Collaborative, UnitedHealth Group
TigerGraph provides these advantages:

**Speed**
Massively parallel processing provides sub-second response for queries with tens of millions of entities/relationships.

**Scale-Out**
TigerGraph’s distributed database scales out with your growing needs (and stays fast, of course). Trillion-edge graphs are running real-time analytics in production.

**Real-time Deep-Link Querying**
Gain deeper insights through queries which can traverse 10 or more hops and perform complex analytics.

**Mixed Workloads**
TigerGraph is designed for HTAP (Transactions + Analytics) with strong transactional guarantees to run both operational and analytical workloads on the same cluster.

**Total Cost of Ownership**
Scale up from a proof of concept into production with the lowest total cost of ownership (due to higher performance, scalability and better compression than other graph databases).

“"The power of graph + AI is to elevate data to connected data, enrich with semantics as knowledge graph, to streamline and scale our AI efforts, ultimately translating to a personalised experience for everybody.””

Dr Jay Yu, Distinguished Engineer/Architect, Enterprise Data Strategy and Architecture, Intuit
The key TigerGraph features are summarized in the following table with unique aspects of the design and corresponding business benefits:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Design Difference</th>
<th>Benefit</th>
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<tbody>
<tr>
<td>Real-Time Deep-Link Querying</td>
<td>• Native Graph design</td>
<td>• Uncovers hard-to-find patterns</td>
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<td></td>
<td>• C++ engine for high performance</td>
<td>• Operational, real-time</td>
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<td></td>
<td>• Storage Architecture</td>
<td>• HTAP: Transactions+Analytics</td>
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<tr>
<td>Handling Massive Scale</td>
<td>• Distributed DB architecture</td>
<td>• Integrates all your data</td>
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<tr>
<td></td>
<td>• Massively parallel processing</td>
<td>• Automatic partitioning</td>
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<td></td>
<td>• Compressed storage reduces footprint and messaging</td>
<td>• Elastic scaling of resource usage</td>
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<tr>
<td>In-Database Analytics &amp; Machine Learning</td>
<td>• GSQL: High-level yet Turing-complete language</td>
<td>• Avoids transferring data</td>
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<td></td>
<td>• User-extensible graph algorithm library, runs in-DB</td>
<td>• Richer graph context</td>
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<td></td>
<td>• ACID (OLTP) &amp; Accumulators (OLAP)</td>
<td>• Graph-based feature extraction for supervised machine learning</td>
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<td>• No-code migration from RDBMS</td>
<td>• In-DB machine learning training</td>
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<td></td>
<td>• No-code Visual Query Builder</td>
<td>• Democratize self-service analytics to derive new-insights from legacy/external data stores</td>
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## How Customers Use TigerGraph

### Workload Types

<table>
<thead>
<tr>
<th>Workload Types</th>
<th>Customer Examples</th>
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</table>
| **Transactional**                    | • Wish.com - TigerGraph is updated with real-time information on browsing, search and purchase transactions and TigerGraph delivers personalized recommendations in real-time for each customer during their entire visit.  
  • China Construction Bank - CCB uses TigerGraph in-transaction during each payment to check for fraud detection and reject payments that are above the risk threshold set. |
| **Analytical**                        | • Amgen - Identify prescriber or doctor networks for referral based on claims data.  
  • Jaguar Land Rover - One of the largest supply chain deployment for graph analytics, reducing the cycle time for planning from 3 weeks to 45 minutes.  
  • HBO - one of the largest deployment of entity resolution and recommendation engine with a graph database in media. |
| **Predictive Analytics**              | • FinTell - Predicting risk-based on mobile device and payment transaction data.  
  • Multiple Fortune 20 Banking Giants - Predicting likely fraudster rings based on Louvain Community Detection algorithm.  
  • Webroot - Predicting websites that are likely to contain malware. |
| **Operational**                       | • US Xpress - Route Optimization for shipping with TigerGraph: The vehicles are routed and dispatched based on the output from TigerGraph for operations every day.  
  • Kickdynamic - Email recommendations inserted into each email sent out by over 200 brands across Europe using TigerGraph (millions per year).  
  • Citrix - TigerGraph embedded into the Citrix platform for employee productivity, analyzes employee behavior for content recommendations every day. |
| **Mixed Transactions, Deep Link Analytics, Operational, Predictive** | • Intuit - Every Intuit QuickBooks transaction passes through TigerGraph for real-time fraud check, 50+ fraud investigators use GraphStudio every day for running analytical queries for fraud detection, Intuit uses a knowledge graph powered by TigerGraph for customer 360.  
  • Optum/UnitedHealth Group - Largest healthcare graph in the world, used by over 23,000 users every day operations (call center & other employees) in production with customer 360 and similarity matching with transactions + deep analytical queries driving productivity improvement. |
| **Translytical (Transactional + Analytical)** | • Pagantis - Real-time credit risk assessment, delivering 500 ms response for each credit request for eCommerce purchases with deep-link analytical queries for each transaction supporting core operations of Pagantis.  
  • China Mobile - Over 300 million calls are run through TigerGraph in real-time every day, with TigerGraph rating the risk for each call for fraud. Call graph is updated in real-time each transaction to re-rate the fraud risk. Deep link analytics based on 5+ connections executed in real-time for each call.  
  • Xandr (Part of AT&T and Warner Media) - World’s largest identity graph in production in the media industry. |
| **Search**                            | • Ippen Digital - Knowledge graph powering publishing industry in Germany to power content search and recommendations.  
  • OpenCorporates - Knowledge Graph powering search and visualization of corporate entities and their relationships at the world’s largest open database of corporate information.  
  • CAS - Knowledge Graph powering search through the abstracts as well as full length research papers and publications for CAS. |
TigerGraph 3.0 is a major release with a number of high-impact features that will address user experience as well as system performance and management. Here are the top new features:

**User Experience:**

- No-Code Graph Analytics for All—TigerGraph 3.0, with its "no code graph analytics," is democratizing the adoption of advanced analytics using:
  - No Code Migration from Relational DB -- Unlock the massive potential in relational data stores (DB instances, data warehouses, data marts) by providing a no-code path to convert schema and load data to a graph.
  - No Code Graph Analytics with Visual Query Builder -- Run graph queries using intuitive drag-and-drop functionality, meaning non-technical users can reap the benefits of advanced graph analytics.

**Other New Features in GraphStudio:**

- MultiGraph/Interpreted Query/Internationalization Support
- Query Engine Enhancements:
  - User-defined Indexes - Query data using Secondary/User-Defined Indexes, from both GSQL or GraphStudio.
  - Dynamic Querying: Modeled after Dynamic SQL, queries can now be installed without schema specifics, and parameters can be provided at run-time.
  - Multiple Path Patterns: Easily search for complex graph patterns by combining multiple linear paths.

**System Management Improvements:**

- Export / Import Utility - Database Export/Import to move database instances easily.
- New Installer - New Parallel Installer for faster deployment.
- Admin Portal Enhancements - New UI for User and License Key management.
Try TigerGraph Enterprise for Free

TigerGraph Graph Database is the fastest and most scalable graph database. The Free License option gives every feature of TigerGraph Enterprise, for up to 50GB of data storage. With TigerGraph’s advanced data compression, 50 GB in TigerGraph is equivalent to between 150 GB and 500 GB data on other graph databases. The free license is available to any user, for both production and non-production use.

Customer Benefits:

- Real-time fraud detection at 7 out of the world’s top 10 global banks
- Care path recommendations for 50 million patients
- Personalized offers for 300 million consumers
- Energy infrastructure optimization for 1 billion people

“With TigerGraph we can join sources of data together and make connections within the data that previously we couldn’t. We can now answer questions that, for the last 20 years, we didn’t think were possible to ask.”

Harry Powell | Director of Data & Analytics Jaguar Land Rover

About TigerGraph

TigerGraph is the only scalable graph database for the enterprise. TigerGraph’s proven technology connects data silos for deeper, wider and operational analytics at scale. Four out of the top five global banks use TigerGraph for real-time fraud detection. Over 50 million patients receive care path recommendations to assist them on their wellness journey. 300 million consumers receive personalized offers with recommendation engines powered by TigerGraph. The energy infrastructure for 1 billion people is optimized by TigerGraph for reducing power outages. TigerGraph’s proven technology supports applications such as fraud detection, customer 360, MDM, IoT, AI, and machine learning.

For more information visit www.tigergraph.com and follow us at: Facebook Twitter LinkedIn

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ENTERPRISE DATASHEET

Some of Our Customers

AMGEN
intuit.
opencorporates
Pagenews
ippen digital platform
Kickdynamic
wish