TPC Overview

Transaction Processing Performance Council (TPC)

TPC Transaction Processing Performance Council

Intro

- Welcome – Thanks to Oracle
- Thanks to Klaus Thielen for reaching out to so many of you in a short time.

TPC Mission

- The TPC is a non-profit corporation founded to define transaction processing benchmarks and to disseminate objective, verifiable performance data to the industry.

TPC Background

- **The TPC is a non-profit, vendor-neutral organization**
- **Established in August 1988 by 8 leading software and hardware companies**
- **4 active benchmarks**
  - **TPC-C: Online transaction processing (distribution centers)**
  - **TPC-E: Online transaction processing (brokerage)**
  - **TPC-H: Decision support for ad hoc queries**
  - **TPC-App: Business-to-business transactional Web services workload**

The TPC today

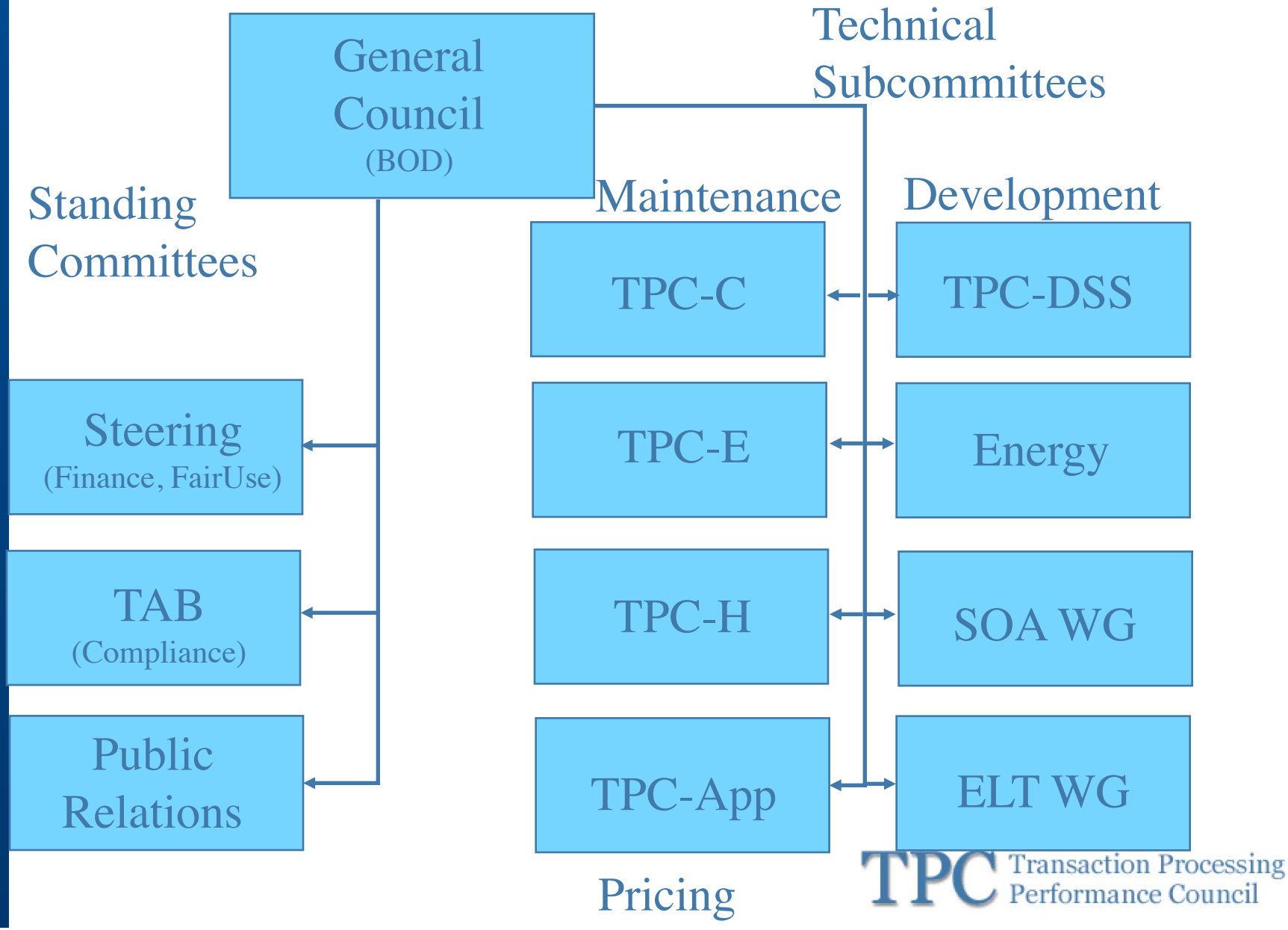
- **Volume of published TPC results continues to rise**
- **22 member companies (24 today)**

TPC Transaction Processing Performance Council

TPC is the Database benchmark leader

- **The TPC has the best, most credible system-level transaction processing benchmarks in the industry**
- **TPC scores are the most requested server benchmarks in database server RFPs**
- **Benchmark elements exclusive to TPC:**
  - **Consistent Price / performance**
  - **Broad industry participation**
  - **Extensive oversight: Fair use policies, audit process**
  - **Not exclusive to particular systems or hardware**
  - **Test whole system performance running any database**
- **Continual benchmark development process**
  - **TPC-App, TPC-E, TPC-DS(soon), and revised pricing specification**
  - **New benchmarks in development: ELT WG, SOA WG, and energy specification**

Structure of TPC



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Challenges: Maintaining benchmark integrity

- **Numerous benchmarks exist**
  - **Benchmark consortiums such as TPC, SPEC, SPC, BAPCo**
  - **Vendor-specific benchmarks such as Oracle, Standard Application Benchmark (SAP), Notes Bench (Lotus), Siebel Benchmark**
- **Benchmarking challenges**
  - **Benchmarketing: Vendors may make inflated performance claims of particular results and promote via aggressive publicity**
  - **Benchmark specials: Companies building specialized components designed exclusively for benchmark performance**
  - **Occasionally, a specific vendor's support for an organization may increase or diminish depending on their systems' performance**
  - **Maintaining credible benchmarks requires constant review and monitoring of definitions, processes, and vendor use of benchmark tests**

TPC: Providing the most credible benchmarks in the industry

- **TPC is the only organization that provides consistent price -performance scores**
- **All tests require full documentation of the components and applications under test, so that the test can be replicated**
- **The TPC requires an independent audit of results prior to publication**
- **TPC tests the whole system performance, not just one piece**
- **TPC is database-agnostic: Oracle, IBM DB2, Sybase, Microsoft SQL Server, MySQL, ParAccel, Exasol and others**
- **TPC provides cross-platform performance comparisons, a view of processor vs. real performance, technology comparisons and actual cost of performance comparisons**

Thank You
Q&A

Backup

TPC-C

- **Online transaction processing (OLTP) benchmark**
- **Simulates a complete computing environment where a population of users executes transactions against a database. The benchmark is centered around the principal activities (transactions) of an order-entry environment.**
- **While the benchmark portrays the activity of a wholesale supplier, TPC-C is not limited to the activity of any particular business segment, but rather represents any industry that must manage, sell or distribute a product or service.**
- **TPC-C performance figures indicate the performance of the entire system, excluding the disks, but includes the clients.**
- **First introduced on August 13, 1992, and was most recently revised on April 2005 with version 5.4.**
- **Measured in transactions per minute (tpmC).**

TPC-E

- **Online transaction processing (OLTP) benchmark**
- **Simulates a complete computing environment where a population of users executes transactions against a database. The benchmark represents an on-line brokerage firm with multiple offices and clients.**
- **TPC-E performance figures indicate the performance of the entire system, excluding the disks, but includes the clients.**
- **First introduced on Feb, 2007.**
- **Measured in transactions per second (tpsE), where the trade-orders are counted.**

TPC-H

- **Decision support benchmark for ad hoc queries**
- **First introduced on February 26, 1999, TPC-H was most recently revised on August 14, 2003 with version 2.1.0.**
- **Consists of a suite of business-oriented ad hoc queries and concurrent data modifications.**
- **Illustrates decision support systems that examine large volumes of data, execute queries with a high degree of complexity, and give answers to critical business questions.**
- **The performance metric reported by TPC-H is the TPC-H Composite Query-per-Hour Performance Metric (QphH@Size)**
- **The TPC-H price/performance metric is expressed as $ /QphH@Size.**

TPC-App

- **Application Server and web services benchmark.**
- **The workload is performed in a Managed Environment that simulates the activities of a business–to-business transactional application server operating in a 24x7 environment.**
- **Version 1.0 was introduced on February 17, 2005.**
- **Multiple Web Service Interactions are used to simulate the business activity of an online supplier, and each interaction is subject to a response time constraint.**
- **Primary metrics are the Web Service Interactions per second (SIPS) per application server system, the total SIPS, which is the total number of SIPS for the entire tested configuration (SUT), the associated price per SIPS (e.g., $USD/SIPS) and the availability date of the priced configuration.**