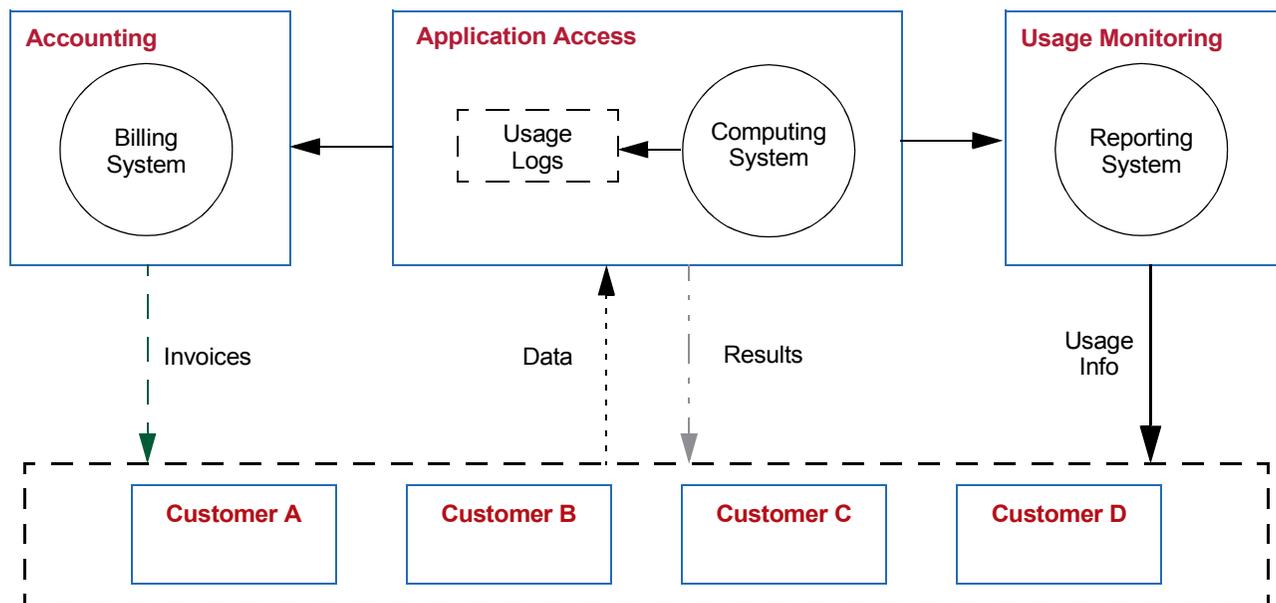# License Tracker in Utility Computing and Application Service Provider Operations

Overview

Customer access to software has evolved from a model based exclusively on customer-owned and installed on customer systems to one which includes remote-access, vendor-owned software and pay-per-use. This evolution has been enabled in large part by high performance computing, the internet, high speed networking and advanced security technologies. The two dominant business models in the new software-as-a-service world are application service providers (ASP) and utility computing operations.

In these environments, typical operation flow would be:

- customers remotely log onto the computing system using secure access technologies

- they upload their data, perform their calculations using the software on the remote system and download their results for analysis on their local computers

- ideally, some mechanism for monitoring usage is provided

- the software vendors invoice their customers based on actual use of the software

In an ASP operation, all three of the core functions (application access, accounting and usage monitoring) are provided from the software vendor's facility. In a Utility Computing operation the application access and usage monitoring capabilities are provided off-site, at a location with HPC capabilities owned by an entity other than the software vendor. Utility Computing facilities are generally operated by the computing system manufacturers, however in some cases they are operated by third parties.

The two key difficulties in these business models are:

- how does the software vendor determine appropriate charges for each customer?

- how do the customers track their usage to ensure they are not exceeding budgets between invoice cycles?
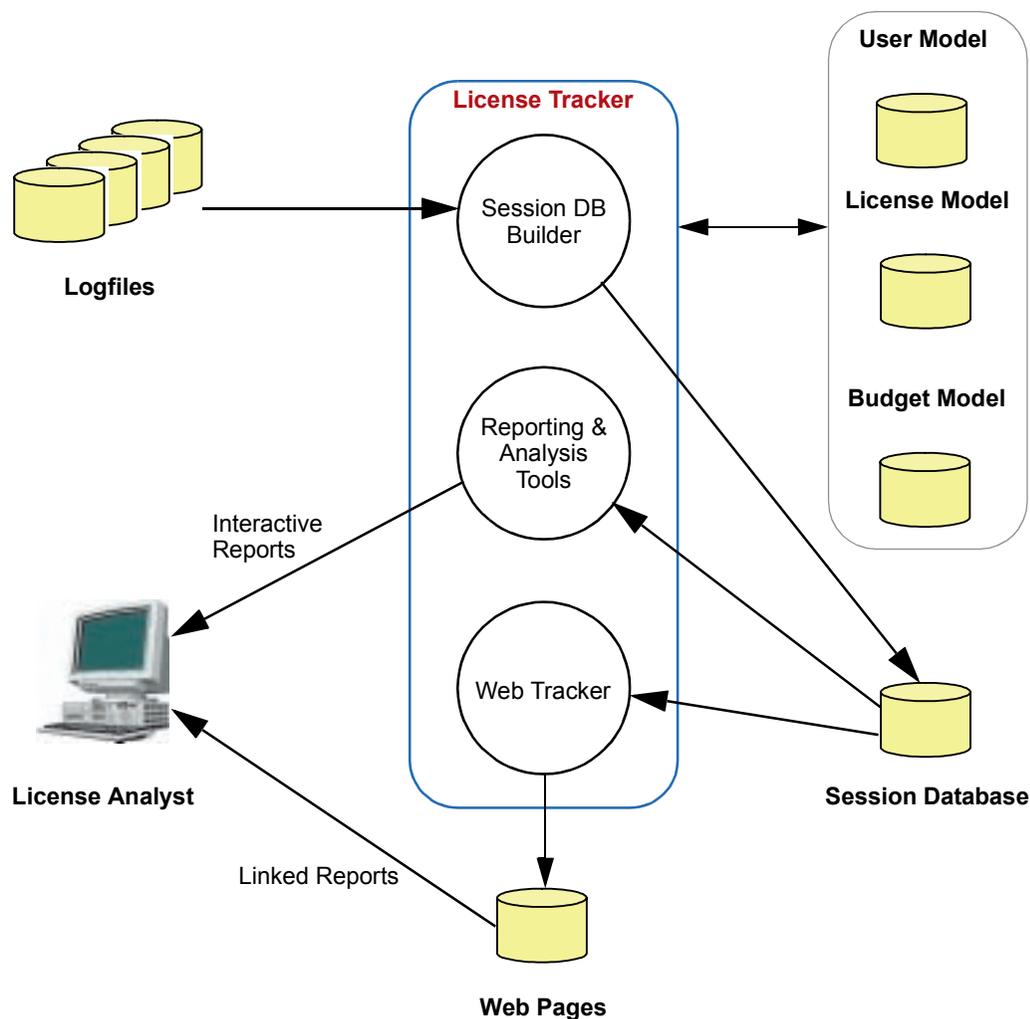
License Tracker addresses both of these issues.

How License Tracker Works

License Tracker processes usage data generated by license managers during the start-up, execution and shutdown phases of an application. **License Tracker** creates a session database detailing each user application session (session information includes userID, machine ID, software feature name, start time and end time).
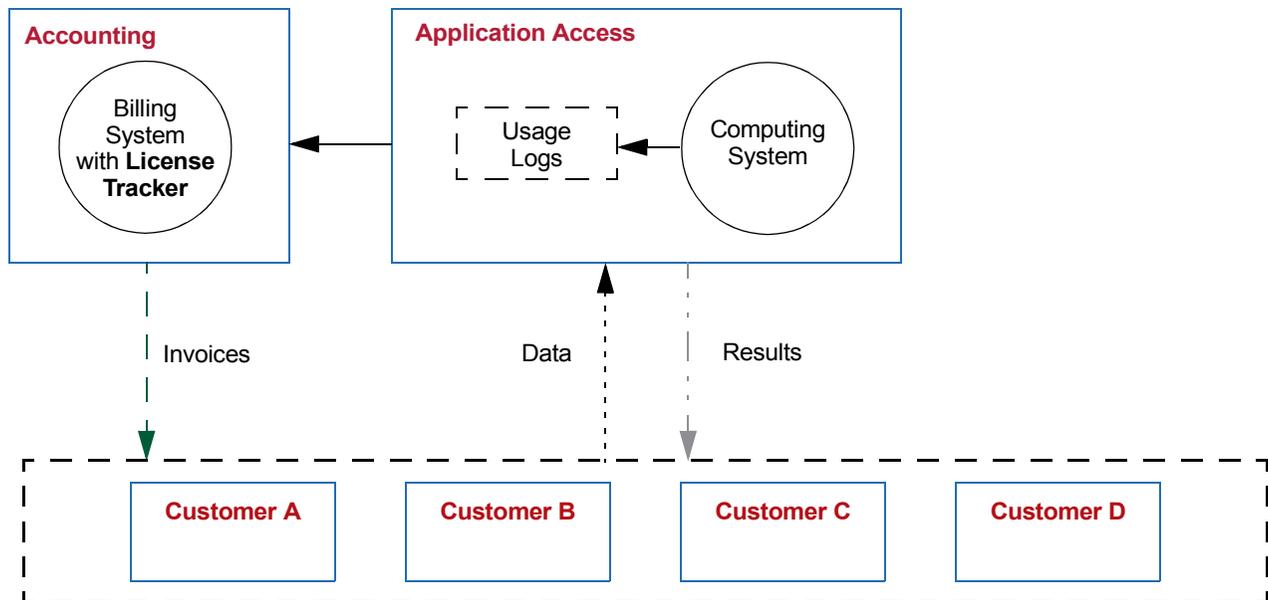
Along with a User Model (which provides proper name and business unit association with each userID), a License Model (which provides license counts and costing information for each software feature) and a Budget Model (which provides monthly pay-per-use budgets) **License Tracker**'s powerful analysis capabilities mine the session database to provide a usage analyst with information needed to make business decisions regarding license counts and software vendor relationships.

For software vendors, **License Tracker** provides the ability to provide access to copies of software above and beyond those owned by the customer. Post analysis of the logfiles enables the vendor to invoice the customers for access to the software on a pay-per-use basis. This access to vendor-owned software can either be at the customer site, or (as detailed in this paper) via remote access to an ASP or Utility Computing environment.

License Tracker as a Component of the Billing System

License Tracker is perfectly suited to fulfill the usage analysis and cost determination requirements for the Billing System in ASP and Utility Computing operations.
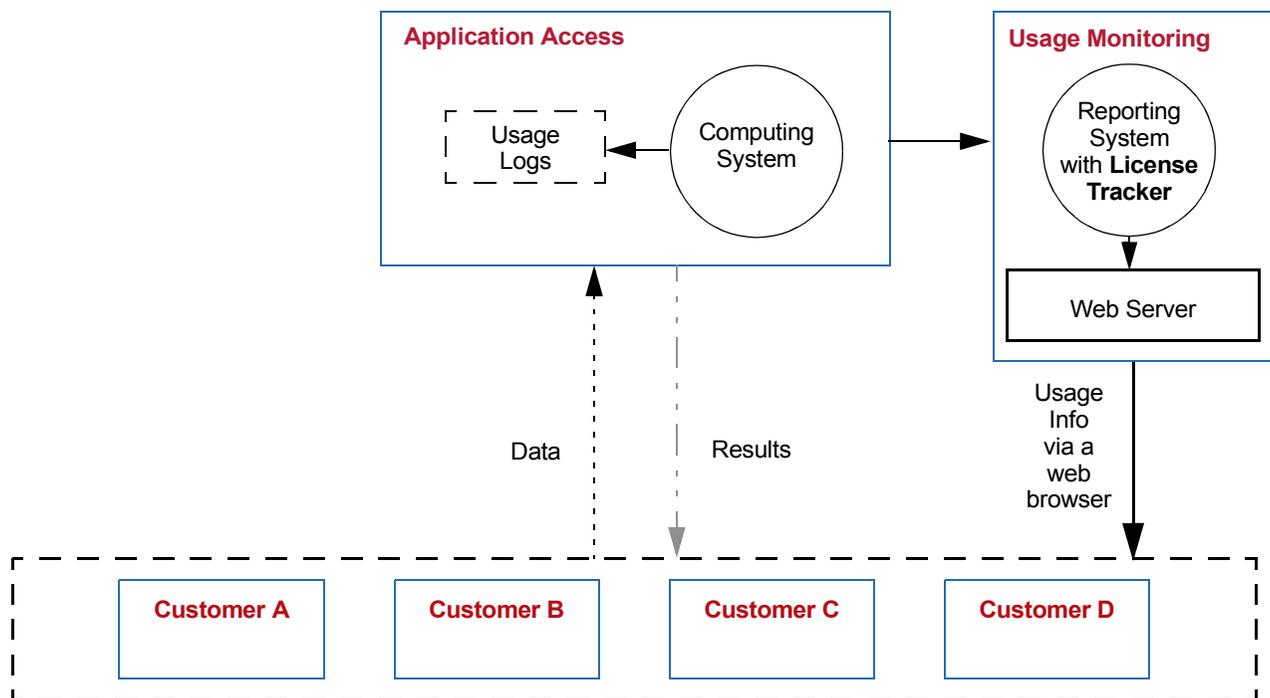

Such a billing system would operate as follows:

- on a quarterly basis (or monthly, depending on billing frequency) the usage logs would be transferred from the application access environment to the accounting environment; in a Utility Computing operation this would mean downloading from the computing system vendor site to the software vendor site

- these logs would be analyzed with **License Tracker** to determine actual usage and billing amounts for each customer; by using a separate User Model for each of the software vendor's customers (and with a different License Model should monetary terms differ between customers) multiple customer information can be extracted from a single log file

- the invoice report would provide usage details and cost calculations to be included in invoices by the software vendor's accounting/sales departments

License Tracker and the Customer Tracking Requirement

The software vendor's customers would have a need to regularly monitor their usage in order to be prepared for the quarterly (or monthly) invoices they would be receiving. This would enable them to take appropriate steps if their actual usage was exceeding their budgeted usage.

The following diagram shows how **License Tracker** would be used to provide usage monitoring for the software vendor's customers.

Such a usage monitoring system would operate as follows:

- on a daily basis the usage logs would be transferred from the computer with the license management system to the web server

- the logs would be processed using **Auto Tracker** (the schedulable batch processing add-on to **License Tracker**) to create a separate set of **Web Tracker** reports for each of the software vendor's customers; each set of reports would be loaded into a separate password protected region of the web server

- the software vendor's customers would then access their **Web Tracker** usage reports from the web site located at the computing system vendor's facility

License Tracker - Enabling Utility Computing and ASP Operations

License Tracker

... maximizing value by understanding usage