

A powerful set of components that provide customer-state and session-state data for the latest real-time personalisation & decisioning applications. Complete on-line customer insight...

Application Note: Real-time Personalisation and Decisioning

Real-time Personalisation & Decisioning

The on-line channel has become the ideal channel to speak personally to your customers and prospects, dynamically tuning offers and messages to drive the most effective conversions, and cross-sell or up-sell opportunities.

However, to make these solutions effective you need to be able to understand the individual customer, and correctly assess their motivation, areas of interest and browsing or shopping behaviour – and more importantly, you need to be able to do this in real time.

Speed-Trap's solutions are designed to provide exactly this understanding and customer insight.

Speed-Trap's Real-Time Engine and ABI Datamart provide access to real-time [session state information](#), telling you exactly what the visitor has been doing during their current session and also [customer state information](#), providing details of the history the visitor has with you and the site, including customer profile and behavioural information.

Key Benefits

- Fast and low-cost of deployment
- Complete, real-time Session State
- High-performance low-latency solution
- Integration with long-term customer history data¹

Customer and visitor data in real-time

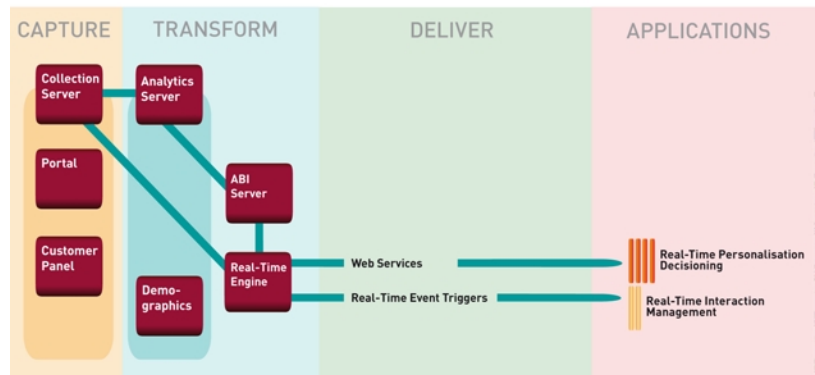
The RTE (Real-Time-Engine) module provides a web services (SOAP) interface that allows personalisation and decisioning applications to request information on a current web session in real time.

The RTE system maintains a "session state record" for each session on the site, which includes information on the origination of the session and significant business events which have occurred since the visitor arrived on the site.

This means that personalisation and decisioning systems can have simple access to detailed, real-time information on any session without needing to interface to the site's infrastructure or maintaining their own session-state server or system.

Also, because the RTE uses a core set of Speed-Trap's unique behavioural models, the events recorded in the session's state record are business-level events, not just click stream or web hits.

This further reduces the cost of deployment and improves performance as the number of events that must be passed is lower and the embedded value of each event is higher.



Light-Touch Implementation

The Real-Time-Engine utilises data captured by the [Capture](#) layer of the Speed-Trap Customer Insight Platform (CIP).

The single change needed to include this script application means that a complete site can be instrumented in minutes. With none of the tag coding, maintenance or variable setting demanded by traditional tagging solutions, cost of deployment and cost of maintenance are very low.

This approach also means that implementation is independent of web server, application server or content management systems.

Configurable Models drive fast deployment

The models embedded in the RTE provide standardised ways of analysing almost any site via a simple configuration interface.

This analysis is performed by passing the captured event stream through a set of behavioural models, which mirror typical business, behavioural & site processes.

These standardised models are configured to match each site and process via a simple form-driven configuration interface. In this way, the advanced analysis provided by these complex and powerful models can be quickly utilised on any site.

The models populate standardised data models which represent the process or behaviour they are analysing. So, for example, the session model creates a data model which will hold information about the campaign which generated the session, the duration of the session, the user type, id, organisation and location of the user and environmental and performance information, while the transaction models will record the session's progress through the transactions and business process you defined, while the search models will record search terms used and products viewed.

Applications

The most common applications for the real-time components of the Speed-Trap Customer Insight Platform

¹ Available mid 2008.

are the dynamic personalisation of web applications and web sites.

The architecture of these types of solutions will either involve external decisioning and modelling platforms or be directly integrated with the web application itself.

Personalisation

In a simple case, the web application will decide it needs to present some personalised content to the user. This may be as simple as a promotional banner based on the products the customer was searching for; or the tuning of a business process based on the visitor's route to the page.

The application will post a web services request to CIP's RTE system, (using the sessionID in the session cookie), and receives a data record including the business events, you configured in CPI's models. In the above examples this might be the search terms the user entered, the product pages they viewed, or the last product page they saw.

The application can then choose the next best action based on the data received from the RTE web services request.

Customer/Session scoring & modelling

Where a more complex or subtle decisioning process is being deployed, the web application may request a decisioning function to suggest an offer or price.

In this case, the decisioning engine will often be running some form of model (e.g. a propensity or pricing model). The decisioning system will query RTE to retrieve session-related inputs to the model.

The second release of RTE¹ will allow customers to build and define their own Java[®] models for RTE. This may be an effective way of improving decisioning speed, as the RTE will have been "running" your model as the session progressed, and have already determined the decision to be made, and have an instant recommendation ready.

As described below, we are also going to allow RTE to fetch long-term customer data from CPI's ABI servers. This means that real-time decisioning systems can take into account both current session data & historic customer data.

Secure Applications

The session state maintained by the RTE will include any activity since the browser was opened, including data from other Portal Sites² and from secure (SSL) pages.

This very integrated data, set spanning multiple log-ins and behaviour to the level of keystroke, can assist in risk scoring secure transactions.

A/B Testing and Dynamic Profiling

In A/B testing RTE's real-time behaviour analysis, linked to the version of the site, provides real-time feedback on the relative performance of each site version.

Customer history link improves performance

Future releases of the Real-Time-Engine will also be able to query the ABI Datamart to pre-fetch long-term customer data to supplement the session-state-vector with selected customer-state-vector information at the start of a session.

This ability will support informed decisions to be made in high-performance, large-scale dynamic web applications

based on current and historic customer behaviour, without needing to query or involve back-end systems and databases, thus lowering decision latency, and reducing back-office system loading.

The RTE will also support the issuing of trigger events, via custom-build algorithms signalling that a session has reached a defined state or performed a defined action.

The RTE will also provide continuous real-time event streams for the Real-Time-Dashboard.

Integrated Solution

The real-time components of the Speed-Trap CIP mesh with the other components in the platform to provide a complete, integrated system for the capture, analysis and exploitation of on-line customer interactions.

Because the RTE utilises the same capture layer technology that drives all other Speed-Trap solutions, you can add real-time applications to existing Speed-Trap deployments, or extend real-time deployments to deliver CRM, marketing and operations support solutions. Re-using the data exploits your investment and shortens new deployments.

Architecture and Performance

Data capture is performed by our patented and proven Dynamic Collection[™] technology and associated high-performance Collection Servers². Data is captured directly from the client browser via a single Web2.0 JavaScript application embedded in the pages of your web site or on-line application.

Capture at the point of interaction means that we provide a uniquely detailed and accurate record of the user's behaviour and experience. The captured behavioural, environmental, and experiential data as well as page-content from the client browsers if needed are passed directly to the RTE.

The RTE passes these events through the models in real-time to build and maintain a real-time Session State Vector in memory. These can be queried by external applications via a web services (SOAP) interface.

Each RTE server is capable of processing up to 10,000 captured events per second, maintaining records for up to 100,000 concurrent sessions and simultaneously processing up to 1,500 Web Service requests a second. Multiple RTE servers can be deployed in parallel for larger sites.

Need to know more?

You can contract Speed-Trap directly or speak to one of our OEM or VAR partners.

Call one of our sales consultants and let them show you just how easy it is to get complete on-line customer insight

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² See Platform Overview for more information.

