

# **Scianta Uniform Data Adapters**

## **An Overview**



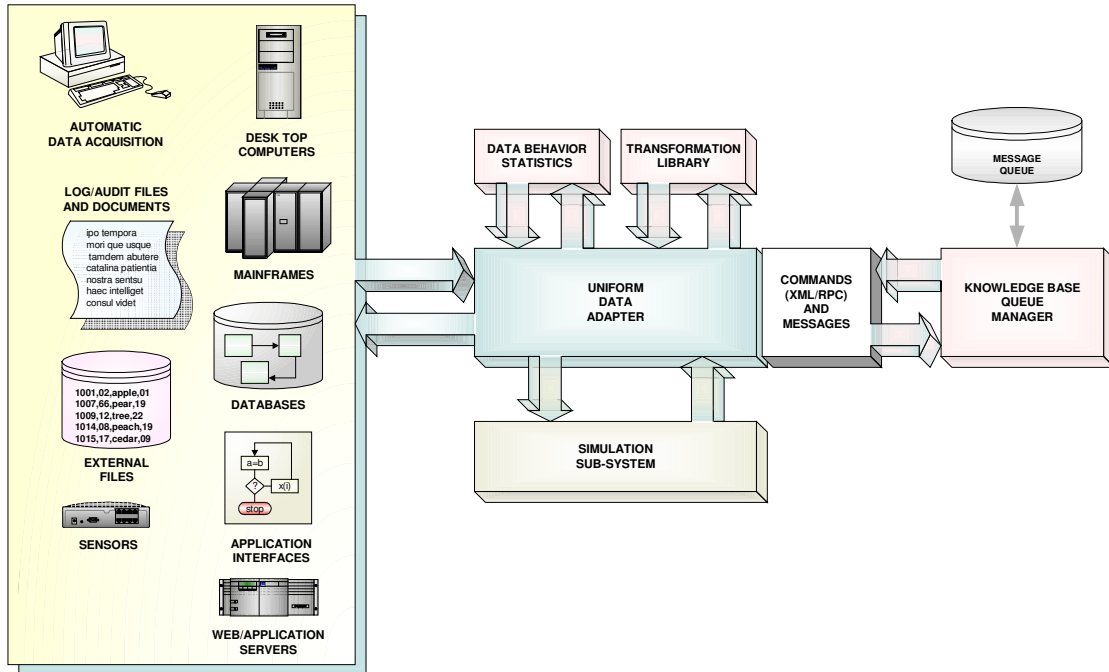
1289 North Fordham Blvd. Suite A312  
Chapel Hill, NC 27517

(919) 678-0477

[www.scianta.com](http://www.scianta.com)

# Scianta Uniform Data Adapters

A Uniform Data Adapter (UDA) is a remote, distributed agent capable of asynchronous and synchronous operation across any public or private network topology. The UDA connects components of the Adaptive Intelligence Platform, in a bi-directional manner, to a data source. The UDA provides a common, uniform, and extensible interface for all the data acquisition, transformation, and data storage requirements of the platform components (excluding serialization). The Uniform Data Adapter implements a clean, logical separation between data and the processes that use the data.



The Uniform Data Adapter is an abstract Java Base Class with a collection of standard methods supporting uniform techniques for acquiring, managing, packaging, and sending data. A data adapter runs in its own control thread and can spawn multiple sub-threads for each of its socket streams. The UDA architecture and processing has the following general properties:

A Common  
Bi-Directional Gateway

By removing the data management functions into an object with a common set of methods, we have a standard and predictable way of communicating with the outside world. The UDA designer buries all the unique data access and management requirements for the source (external files, spread sheets, databases, application API calls, log file parsers, etc)

An XML-based  
Messaging System

Using encapsulated XML remote procedure call (XML-RPC) technology the Uniform Data Adapter handles complex data, messages, commands, and controls in a uniform, highly secure, and easy to use and understand way.

## Scianta Uniform Data Adapters

---

Integral Jetty HTTP Server-based	Each Uniform Data Adapter is a pure Java HTTP Server and Servlet Container, thus eliminating the need to configure and run a separate web server (such as Apache) in order to use Scianta applications with Java, servlets and JSP's. Jetty provides a fully featured, very low overhead web server for static and dynamic content.
Integrated Security and Authentication	Uniform Data Adapters share their package transport mechanism with the component manager's security and authentication (privilege checking) facilities. Data security is ensured through 256-bit Blowfish encryption.
On-Request and On-Timer Sampling Rates	Each process stream acquires data and sends it to an Autonomous Component Manager (ACM) according to a built-in scheduler. The scheduler responds to either a sampling rate (data is acquired and send every N time periods) or a command from the ACM (a packet of data is returned only when the adapter receives a <i>getData</i> command.)
Automatic GUI Prompting for Local Data Acquisition	Many diagnostic, knowledge-based processes, and analytical processes execute interactively with a Scianta Intelligence desktop agent. Backward chaining inference engines, as an example, prompt for values when they reach the bottom of an exploration tree. A default graphical user interface UDA automatically connects local data acquisition with remotely running knowledge bases.
Extract, Transform, and Load (ETL)	The Uniform Data Adapter provides a wide spectrum of methods for transforming data (such as statistical analyses, data normalization, outlier management, date and time conversions, time to periodic indices, string manipulation, and table look-ups). The UDA also is a point of capture agent for computing complex <i>if-then-else</i> virtual or calculated fields.
Data Simulation	A complete data modeling and simulation subsystem is integrated with the Uniform Data Adapter class. Through this mechanism you can learn the behavior of incoming data packages (or sets of incoming data packages) and then use the data adapter to generate simulated data. You can also specify a mix of simulated and real data (to any desired proportion of degree of randomness). Simulated data is ideal for stress testing, debugging, sensitivity analysis, and noise impact assessment.

---

For more information or to schedule a presentation call (919) 678-0477 or visit [www.scianta.com](http://www.scianta.com)

# Scianta Uniform Data Adapters

---



©2004 Scianta Intelligence, LLC  
TB-IP-007