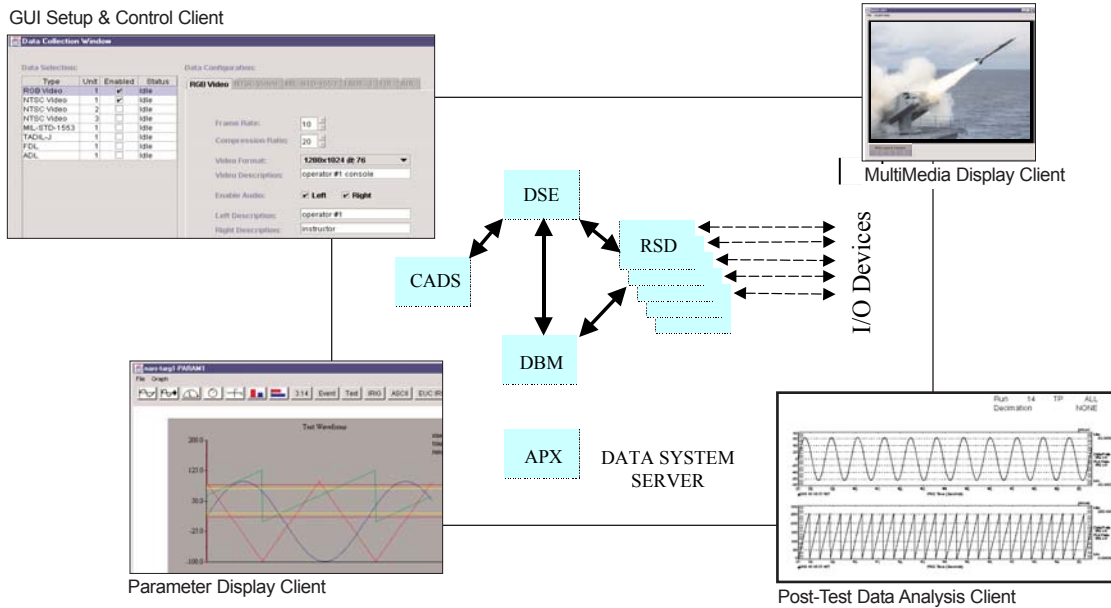


Data System Server - DS2



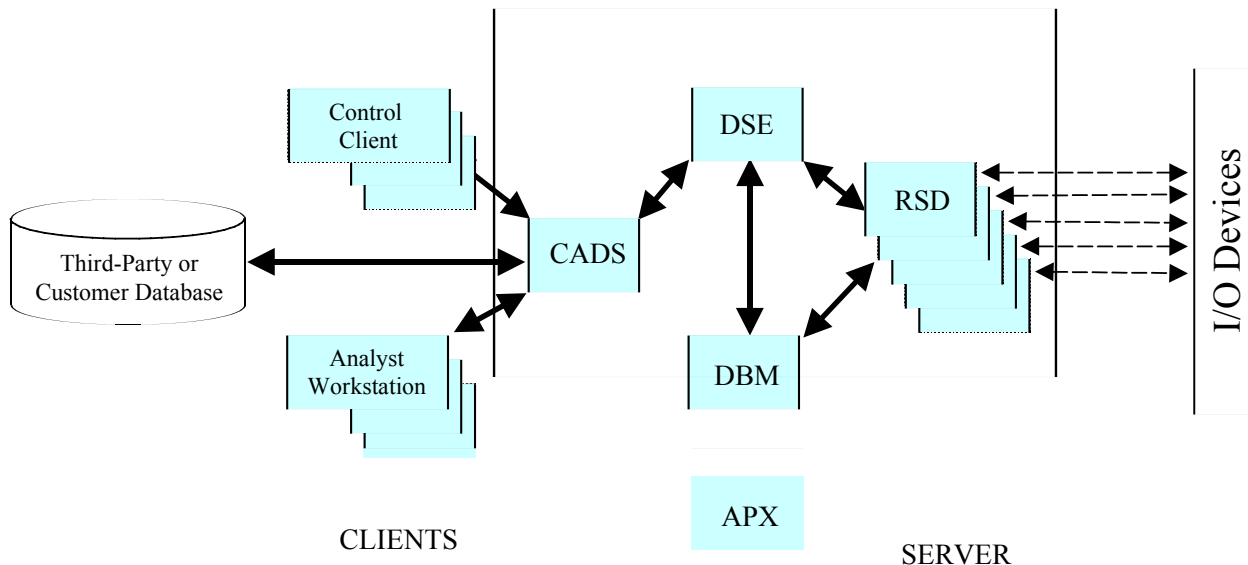
Open Architecture Client/Server Software For Real-Time Data Acquisition, Simulation, and Test Applications

The AP Labs **Data System Server™** (or **DS2™**) software provides an open systems solution for a wide range of Data Acquisition, Simulation, and Test applications.

DS2 allows the capture, archival, and replay of multiple synchronized data sources, including analog, digital, audio and high resolution video (with compression and decompression), digital serial, avionics, and similar interfaces typically encountered in the defense/aerospace community. Data is time-stamped using IRIG or GPS time and archived on SCSI or FibreChannel storage devices.

DS2 is a client/server software "platform" for the implementation of such data acquisition and archival systems. A well defined software interface enables the DS2 "server" to be efficiently interfaced with a wide range of "client" entities such as Graphical User Interface programs (for setup and control), Data Visualization programs (for real-time and/or post-test data analysis), and databases (for parameter definition and data management).

- *Client/Server Model, with applications in:*
 - Data Acquisition
 - Simulation
 - Test
- *API software interface defined for use with GUI or third-party clients*
- *Flexible standard network support: Ethernet, ATM*
- *Support for multiple Input/Output types, including MIL-STD 1553 and Serial Communications*
- *High Resolution Video acquisition with JPEG compression and decompression*



Data System Server (DS2) Software Architecture

Referring to the system architecture diagram above, the DS2 major "server" software components include:

- **Command and Data Server (CADS)** - responsible for all communication between the DS2 server and the clients (HCC or AWS).
- **Data Server Executive (DSE)** - the master controller of all server activities.
- **Data Buffer Manager (DBM)** - responsible for managing all data buffers in the server.
- **Real-time Service Daemon (RSD)** - controls a data input, output or processing task.
- **AP Labs Executive Services (APX)** - provides operating system extensions via a platform-independent API.

Additionally, the major "client" software components typically include items such as:

- **Control Client** - a JAVA-based GUI for setup, control, and status display of the real-time system.
- **Analyst Workstation (AWS)** - a GUI to setup and control the data displays seen while the DS2 is running, and extract custom data types.
- **Digital Video Player (DVP)** - an application specifically designed for the real-time or replay display of video and audio on a standard PC or workstation.

Portability has been designed into the DS2 software through the use of standard Application Programming Interfaces (APIs) as abstraction layers - enabling DS2 to run under different operating system environments (such as Solaris, VxWorks, Windows) and underlying bus structures (VME, PCI etc.).

While many I/O capabilities are already supported by DS2 it is not uncommon for customer requirements to include additional, custom, or unique I/O types. DS2 is **modular** so that new customer requirements can be easily added.

DS2 is not a "black box system" which tries to be "all things to all people" - that approach usually results in a product which is not quite good enough for any real-world application. It is expected that customers may need additional functionality outside the scope of DS2 - this additional functionality could be provided either by customers themselves or through third-party software products such as relational databases and data analysis programs. The **client/server** architecture of DS2 provides an ideal software integration platform, allowing it to interface easily with these "non-DS2" entities.