



Time-Synchronized Visualization of Arbitrary Data Streams for Real-Time Monitoring and Historical Analysis

NASA has developed a software-based innovation that provides a new visualization framework for the Synchronization and Visualization of Arbitrary Streams (SAVORS).

The purpose of SAVORS is to supercharge the command-line tools already used by administrators with powerful visualizations that help them understand the output much more rapidly and with far greater scalability across systems. SAVORS not only supports the output of existing commands, but does so in a manner consistent with those commands by combining the line-editing capabilities of vi, the rapid window manipulation of GNU screen, the power and compactness of perl expressions, and the elegance of Unix pipelines. SAVORS was designed to support impromptu visualization, where the user can simply feed in the commands they were already using to create alternate views with optional on-the-fly aggregation of information across many systems. In this way, visualization becomes part of the administrator's standard repertoire of monitoring and analysis techniques with no need for *a priori* aggregation of data at a centralized resource or conversion of the data into a predefined format.

This technology is available for licensing from NASA's space program to benefit U.S. industry.

Technology Details

SAVORS can show any number of data streams either consolidated in the same view or spread out across multiple views. In multi-data scenarios, data streams can be synchronized by time allowing even distributed data streams to be viewed in the same temporal context. In single-data multi-view scenarios, views are updated in lockstep fashion so they show the same data at the same time. Together with its integrated parallelization capabilities, this allows SAVORS to easily show meaningful results from across even very large installations.

SAVORS consists of three components: a console, some number of data servers, and some number of views. The console is responsible for user interaction, spawning data servers and views according to the given command pipelines, and controlling synchronization between data streams. The data servers are responsible for spawning and interacting with the commands that generate data, manipulating the data as specified, and sending the data to the console and views. Finally, the views are responsible for visualizing the data as specified on one or more displays.

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Benefits

- Supports the output of existing commands
- Ability to show data either consolidated in the same view or spread out across multiple views
- Ability to easily show meaningful results from across even very large installations



Internet Security

Commercial Applications

- Intrusion Detection Systems
- Host OS Security
- Homeland Security

Contact the Ames Technology Partnerships Office at 1-855-627-2249 or ARC-TechTransfer@mail.nasa.gov