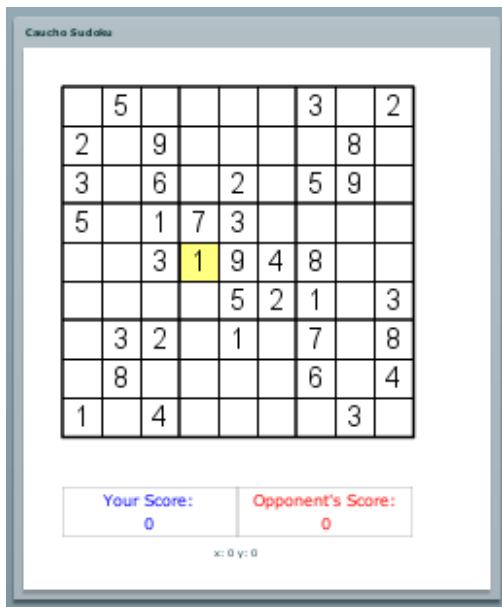


caucho Sudoku

BAM, HMTP, and Hessian



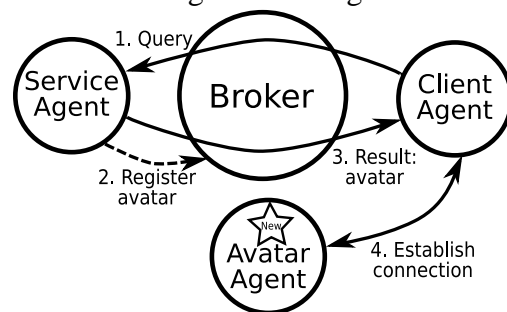
Caucho Sudoku is a highly interactive Flash game in which two players face off against each other to fill in the most squares of the same puzzle.

How the game works

The game clients are written in Flex and can be used in the browser with Flash 9. Each client connects to the Resin server which creates a **client agent**. This agent acts on behalf of the client in the **Brokered Agent Messaging (BAM)** architecture. Now the client is fully

able to participate in sending **messages** and **queries**, the two main types of communication supported.

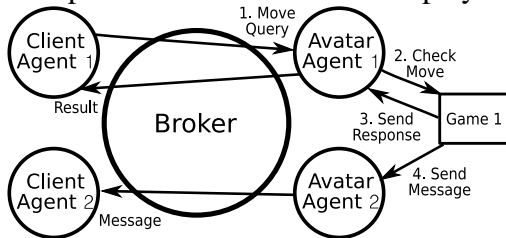
The first action that the client takes after getting an agent is to send a query to the Sudoku **service agent** to start or join in a new game. The service agent creates a new **avatar agent** to represent the player within this particular Sudoku match. The service agent then registers this avatar with the broker and returns its name to the client. All of the player's actions within this particular match will use the avatar created by the service. Once another client joins, the service creates a new game instance and gives it to both players' avatars. Now the game can begin!



Game play

The game instance holds all the solutions to the board. When a player tries to enter a value

on his or her board, the client sends a query to its avatar. The avatar uses its game instance to check the validity of the move. If the move is valid, the game sends a response to the player that entered the move and a message to the other player to let them know about the move. If the move is invalid, the player is penalized and an updated score is sent to both players.



Once all the spaces on the board have been filled with the correct entries, the game also sends messages to both players letting them know the game is over. The player with the highest score wins!

BAM Architecture

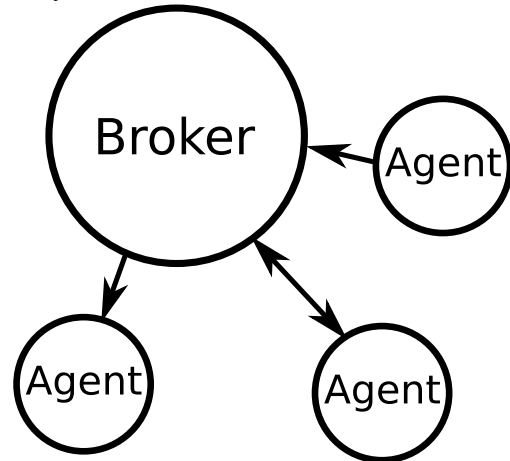
Cauchosudoku is built on Cauchos new Brokered Agent Messaging (BAM) architecture. In addition to games, BAM makes it possible to have full interactivity in any web or mobile application. Examples include Web 2.0 applications, chat/IM, software as a service (SaaS), and web services. BAM makes clients full participants in the application, able to send and receive asynchronous messages with low overhead and network impact.

BAM enables full bidirectional communication anywhere that it is needed in the network. The protocol that makes this possible

Cauchotechnology, Inc.

Cauchotechnology was founded in 1998 as an engineering shop devoted to reliable open source and high performance Java. Almost a decade later, Cauchotechnology is a globally recognized leader in open source Java-PHP server technology and web services. Cauchotechnology is based in La Jolla, California and has a global sales, support, training and professional services network. Cauchotechnology is a Sun Microsystems Java EE licensee.

is the Hessian Messaging Transfer Protocol (HMTP). Based on Cauchos ultra-fast Hessian protocol, HMTP goes beyond what HTTP can provide to create a truly interactive Internet experience. HMTP outperforms SOAP and CORBA, yet provides greater functionality. HMTP provides even more capabilities than the Comet technique for real time message delivery.



One of HMTPs strengths is its friendliness to developers. Clients, consumers, servers, and services are all addressable in the same way, capable of sending and receiving messages and queries. With implementations in Java, Flash, and Flex, HMTP is ready for use today in either client-to-server or server-to-server environments.

More information

For more information about BAM, HMTP, Hessian, and other Cauchotechnology products, please visit <http://hessian.cauchotechnology.com/>