Zsh

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What is Zsh?

Zsh is a shell for Zeus Agents. It provides two new features:
- The deployment of many agents within one JVM. This reduces the memory footprint of a system of Zeus agents radically because each instantiation of a JVM requires a considerable allocation of memory even before it loads, starts and runs any agent code. The use of Zsh allows for up to approximately 80 agents to be deployed on one machine.
- The deployment of many agents of the same type without creating copies of the agents in the Agent Builder. Many people seem to want to build agent applications that rely on the instantiation of types of agents, rather than specific agents. Despite reservations about the wisdom and philosophical soundness of this feature we decided that since people want to do it we would develop a way of doing it!

Zsh is command line operated but supports the use of scripts for running predefined agent systems.

How do I use Zsh?

Zsh is run by invoking the $zeus_install/zsh.bat file. If you set your path to include the $zeus_install file then you can run this by opening a dos prompt, changing directory to your project directory and typing "zsh <param1> <param2>" where:

<param1> is the name of the ontology file for your agent system (something like "ultimateAgents.ont") and

<param2> is a number representing the time period that any Facilitator (yellow pages) agent that is started will wait between querying the agent system for abilities. A low number (1.0 for instance) indicates a rapid refresh of the Facilitators directory, a high number (10.0) means that a new agent may wait for quite a while before it is properly noticed by the rest of the system.

Your prompt should change to

```
Zeus 0>
```

- The commands are:
  quit : exit Zsh and stop all the agents running in this shell yp : start a Facilitator Agent (provides a yellow pages service for the Utility Agents) help : provides a short help message
- viz : run a Visualiser vis : run a Visualiser
- *AgentName <parameters>* : run a Utility Agent of type AgentName. *<parameters>* is the appropriate parameter set for that agent.
- *AgentName -range <99> <99> :* where *<99>* is simply an integer. Run *<99>-<99>* copies of the agent type *AgentName* each named according to the convention *AgentName_XX* where XX is the number of this copy.
- *AgentName -range <99>* :run *<99>* copies of the agent type *AgentName* each named according to the convention *AgentName_XX* where *XX* is the number of this copy, and *<99>* is an integer.
- *script :* run a script containing commands according to the format given above

Credits

The original Zsh was written by Christopher P. van Buskirk [Chris.vanBuskirk@vanderbilt.edu]
This version was adapted and integrated with the 1.04 build of Zeus by Simon Thompson [simon_giles_thompson@yahoo.com]

Known Problems

- If more than approximately 80 agents are instantiated in the shell on a twin processor Pentium II workstation with ½ GB RAM the JVM either cannot get the graphics context (if the agents have GUIs) or the agents report that they cannot get a port for communication.