SWIN BUR NE

CENTRE FOR ADVANCED INTERNET ARCHITECTURES

L3DGEWorld Demonstration

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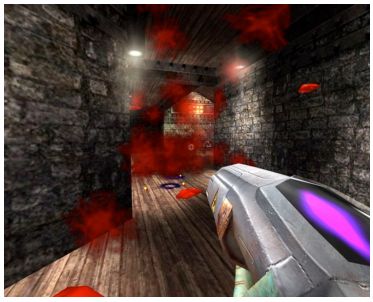
Outline

- What is L3DGEWorld?
- L3DGEWorld Mechanics
- L3DGEWorld Features summary
- Supercomputer Monitoring
- Future Work

What is L3DGEWorld?

- Network monitoring application
- Visualising network events and actions(real world) in a 3D World (virtual world).
- Game Engine: Open Arena (Quake 3) (http://www.openarena.ws/)



What is L3DGEWorld?

- Metrics/Statistics from the real world dictate entities' actions in the virtual world.
- Actions in the virtual world can influence the real world.

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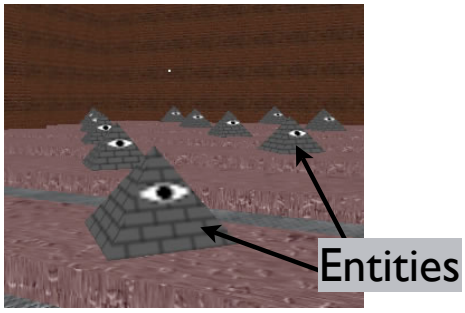
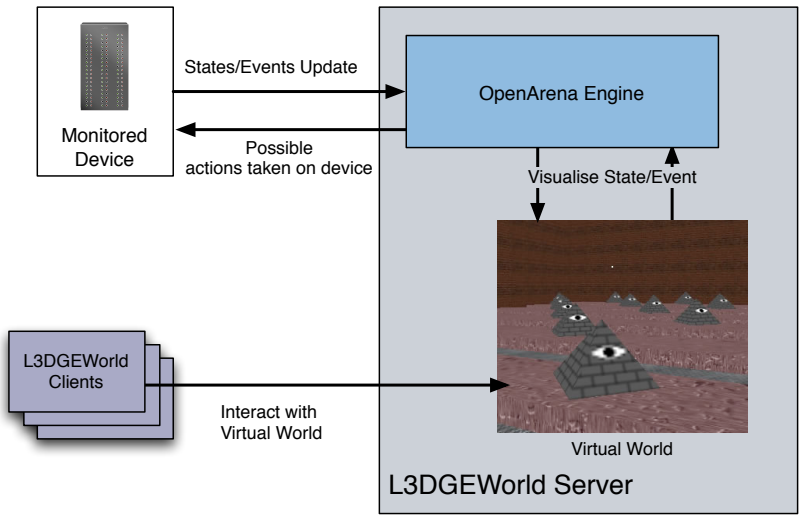


Real World

Virtual World

L3DGEWorld Mechanics



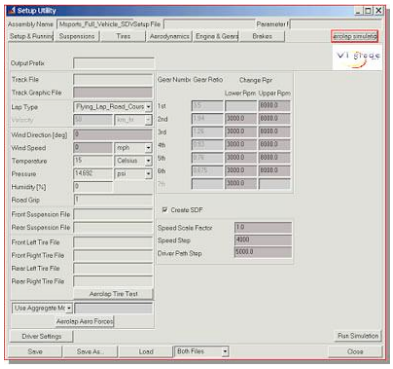
L3DGEWorld Feature Summary

Entities in L3DGEWorld can:

- Spin
- Scale
- Jump
- Roll
- Change Colour
- Oscillate speed
- Sound
- Change Model/ Skin

Why L3DGEWorld?

- Visualisation of multiple states is easier to distinguish than numbers.



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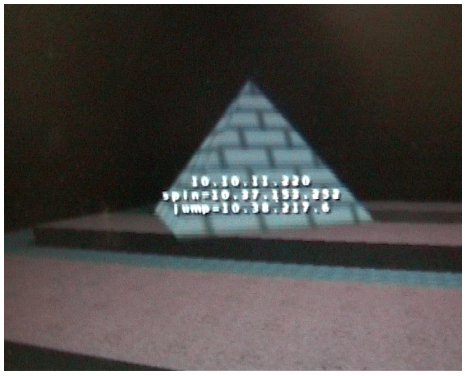
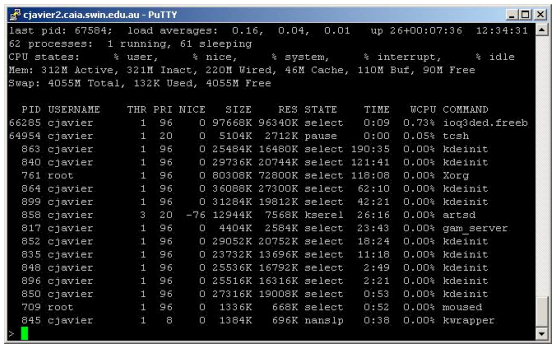


Why L3DGEWorld?

- Visualisation of an overview of multiple monitored devices is easily comprehended.

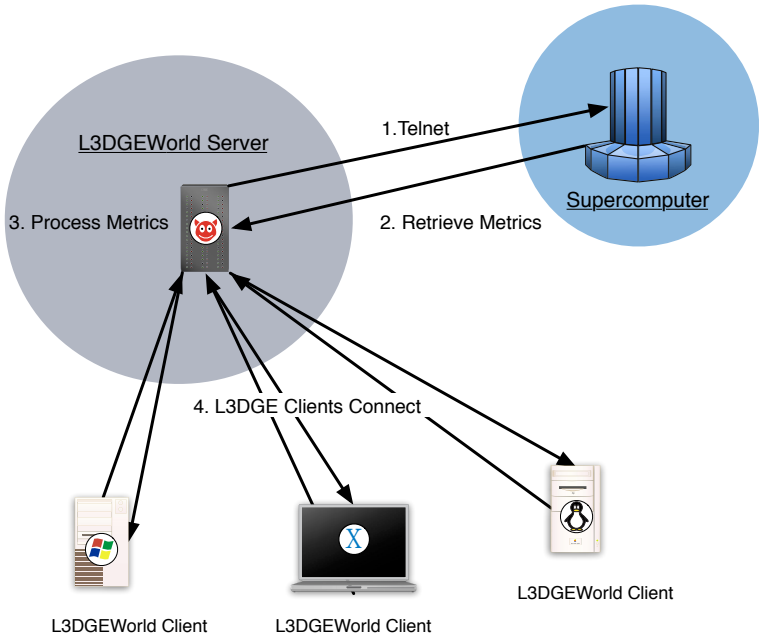


or

Supercomputer Monitoring

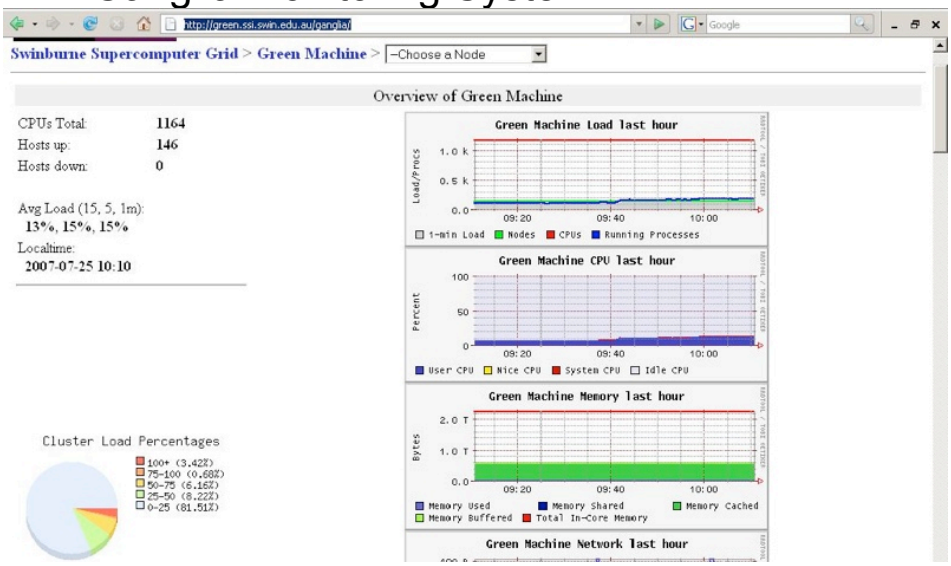
- 146 Cluster nodes
- Multiple Metrics can be mapped for each node to an entity.
  - CPU Usage
  - Memory Usage
  - Disk Usage
  - Packets Per Second (In/Out)

L3DGEWorld Setup (Supercomputer)



Supercomputer Monitoring

- Ganglia Monitoring System



Supercomputer Monitoring

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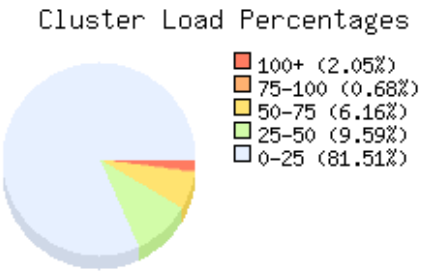

Supercomputer Monitoring

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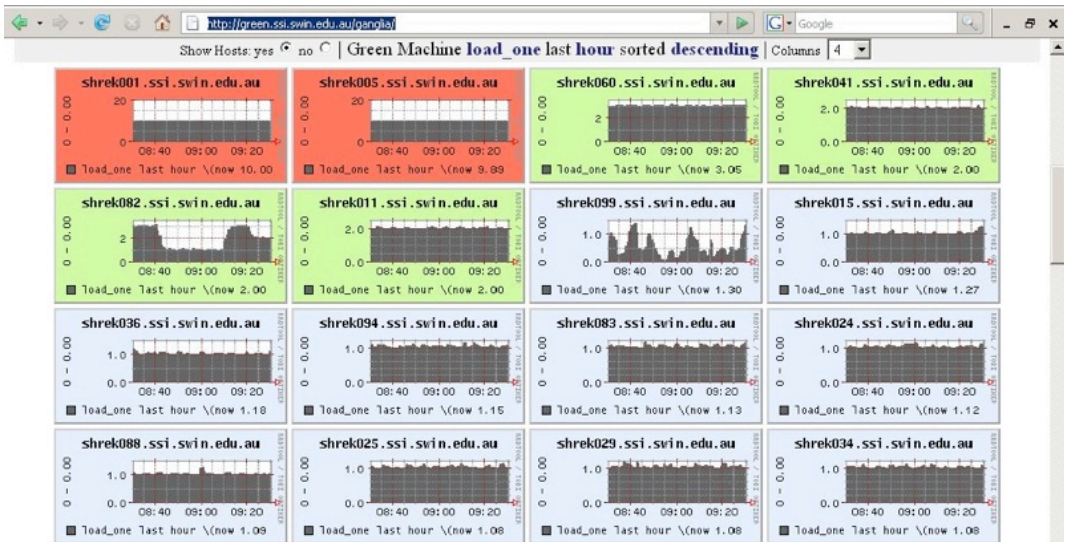
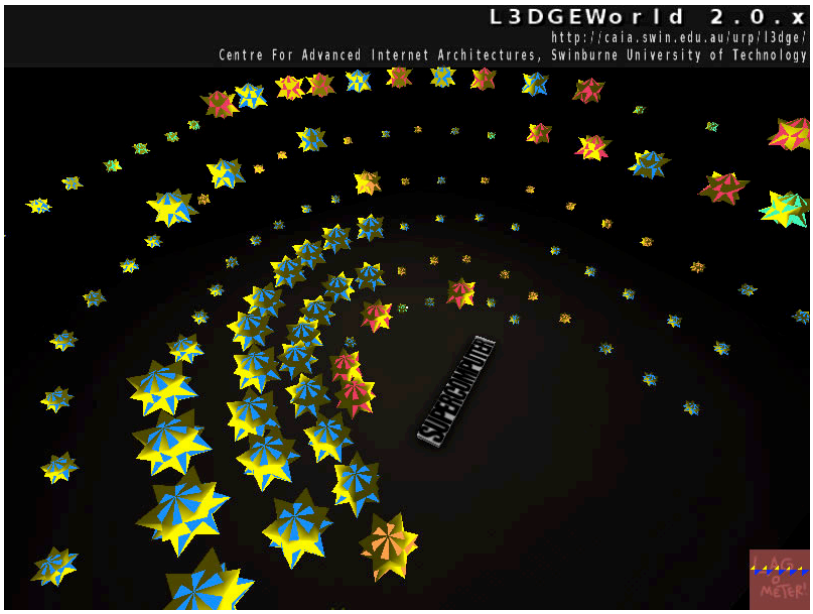


L3DGEWorld Monitoring



Future Work

- Multimedia Work
  - Custom Maps
  - Custom Entity Models
- Game Engine Work
  - Testing network and code limits
  - More static info show (eg graphs)
- Visualisation Work
  - Testing best combinations of entity actions.

Future Work

- Alternative uses for L3DGEWorld
  - SNMP
  - Alarm Systems
  - IP Phone Management
  - Network Traffic Control
  - Motorsport Telemetry

Special Thanks

- Dr Jarrod Hurley (Access to the Supercomputer)
- Lucas Parry (L3DGEWorld Developer)
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- Grenville Armitage (L3DGEWorld Director)

Questions?