Osaka University

JGNII

The Mission of NICT Osaka Research Center

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NICT Osaka RC / Osaka University
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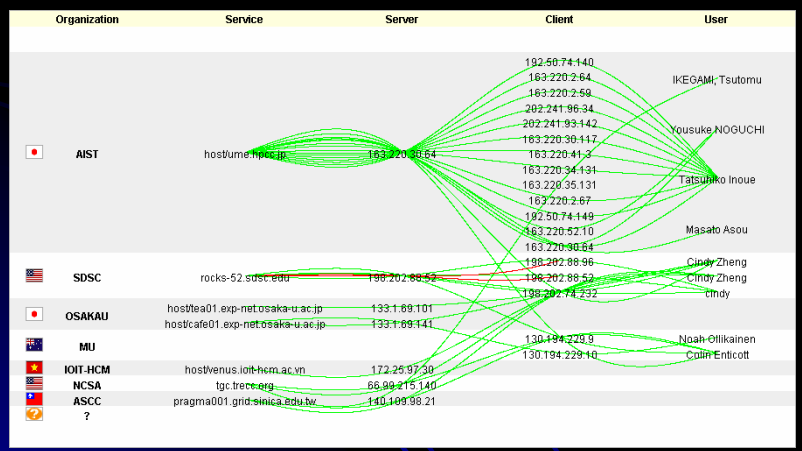
Our mission and target

- NICT Osaka Research Center is one of major R&D centers.
- Our team aims to develop a middleware and its component technology that will allow scientific experts to work together in a distributed collaborative environment with efficient large-scale data sharing and visualization.
- Key technologies are
  1. Seamless and safe resource management under a large-scale Grid environment,
  2. High performance remote visualization and computation,
  3. Network QoS control technology to improve the efficiency of network resources,
  4. and E-science applications.

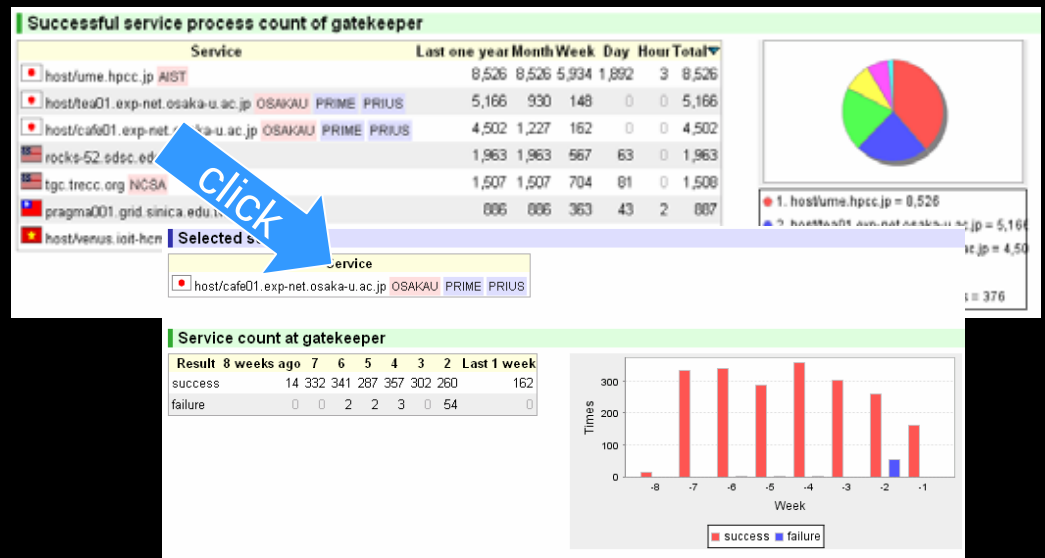
1. Grid Security Monitoring System

by Mr. S. Takeda

- Visualizes job information reported by grid resources distributed among organizations
- Warns abnormal events which exceed pre-defined threshold
- Helps administrators to find problems and their causes easily and quickly



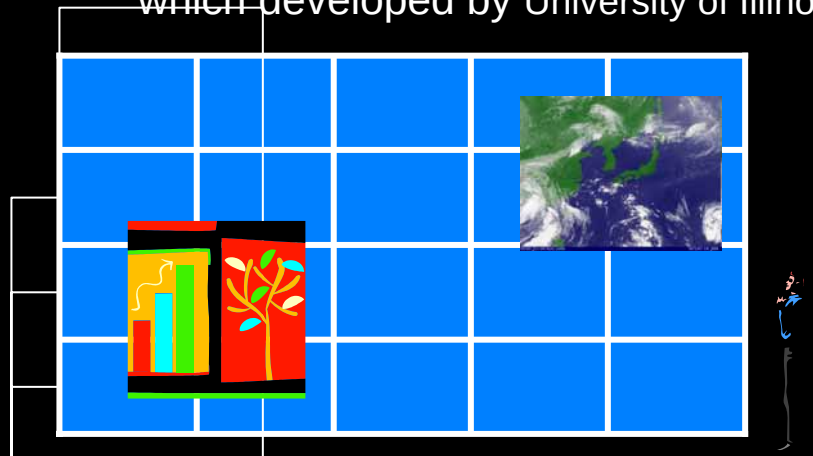
Overall graph view
(Green: success, Red: failure)



Detailed table and chart view

2. Remote Visualization
with SAGE and Tiled Display

SAGE：Scalable Adaptive Graphics Environment (http://www.evl.uic.edu/cavern/sage/index.php)
which developed by University of Illinois at Chicago. Electronic Visualization Laboratory



SAIL:Sage Application Interface Library

feature

・distribute technology

・heterogeneous and scalability

・range from a single computer to the cluster computer.

Display control server

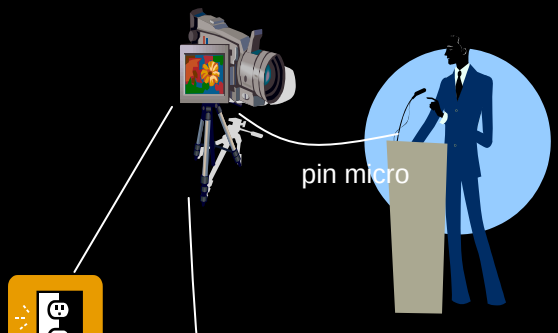
each sun workstation control two LCD displays。
SAGE Receiver receive the stream from Sail and indicate in tiled display

Management server…control the all of system

FSManeger in Management server control the all components of system

Forwarding a PRAGMA Greeting Message by Osaka Univ. President from Thailand USING JGNII TH-JP line

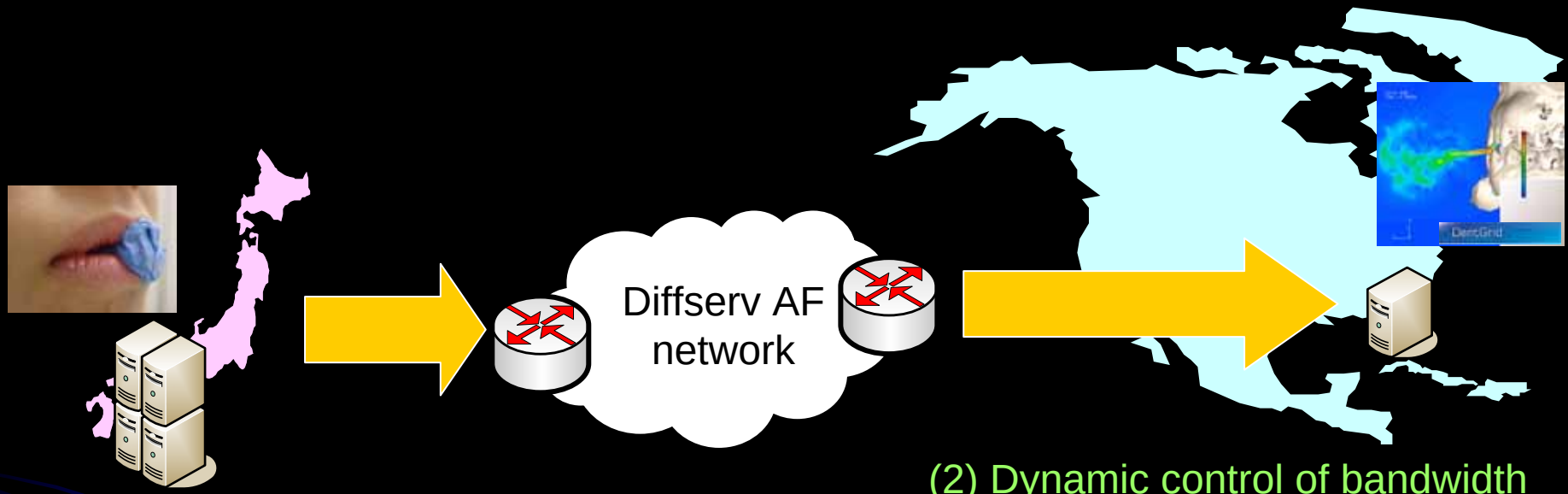
on October 17, 2006



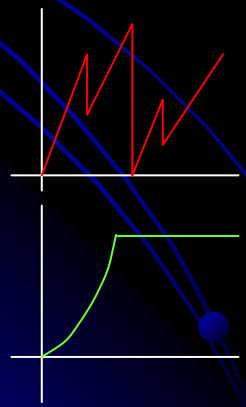
10/17 の挨拶画像と会場の様子

PRAGMA Osaka conference room

3. Network QoS Contorol technology for volume data transfer



(1) Each data transfer consists of two kind of flows



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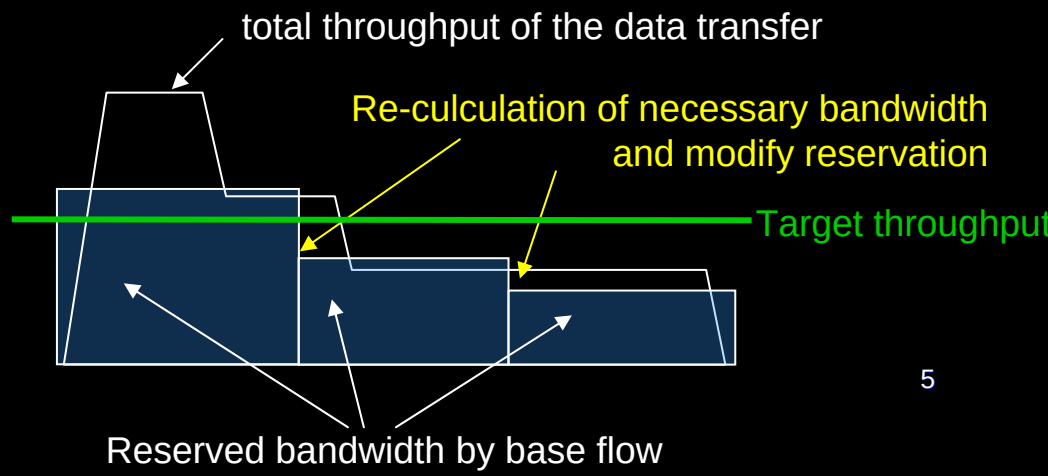
Base flow

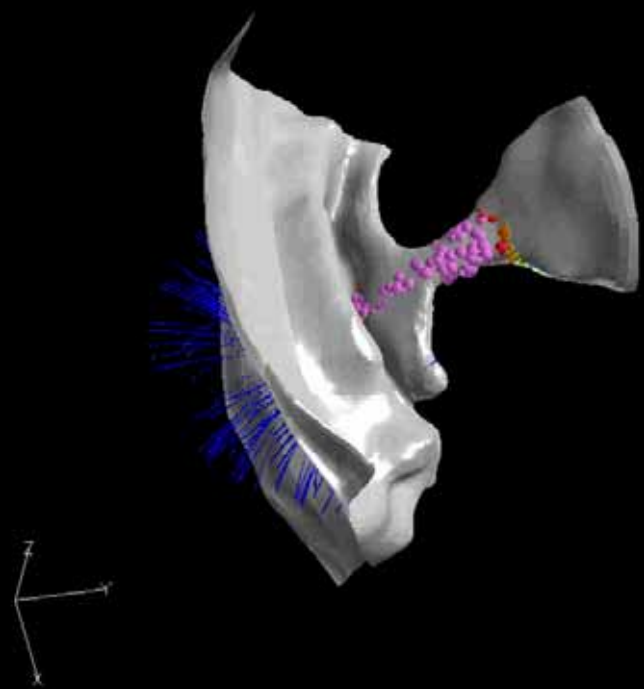
(2) Dynamic control of bandwidth reservation for base flow



4. E-Science Applications

CFD Simulation for Speech by Dr. K. Nozaki

SC06 HPC Analytic Challenge Finalist



4.High Performance Remote Visualization Network by Dr. K. Nozaki

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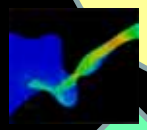
Tampa Convention Center

Display Image
AVS/Express
for Demonstration

JGN2
APAN
STARLIGHT

JGN2 Osaka Research Center / Cyber Media Center Osaka University



High Speed Data Transfer (UDT)

Polygon Data

Computation Service Network

Visualization result

Parallel visualization

AVS/PCE×16

CFD Data

NAS

Making polygon

AVS/PCE
Front Node

Network Emulator

AVS/Express
for testing

Experimental QoS Network

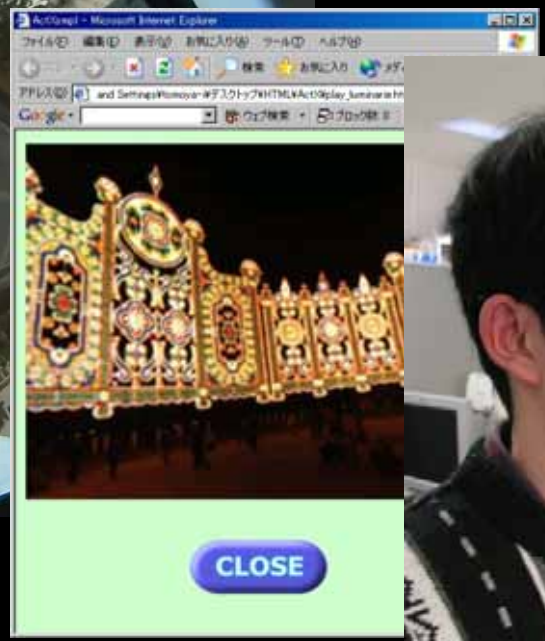
4. E-Science Applications

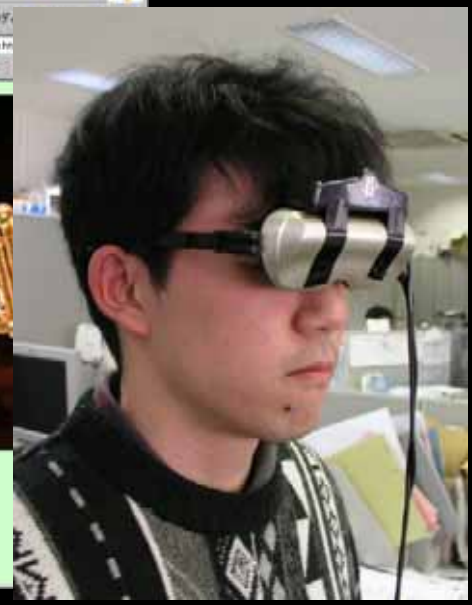
Shared Remote Surveillance with 360 ° Camera

Omni-directional cameras

Acquired image

Viewer programs





Conclusion

- We support E-Science by constructing Grid environment and developing with combining and merging these technology.