


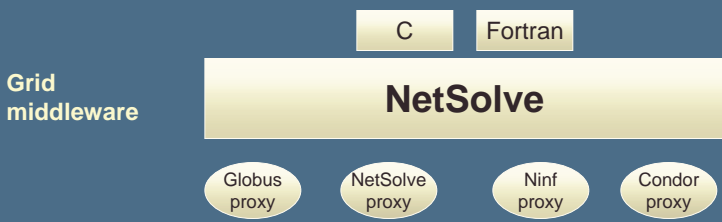
How To Use NetSolve

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NetSolve: A Plug to the Grid



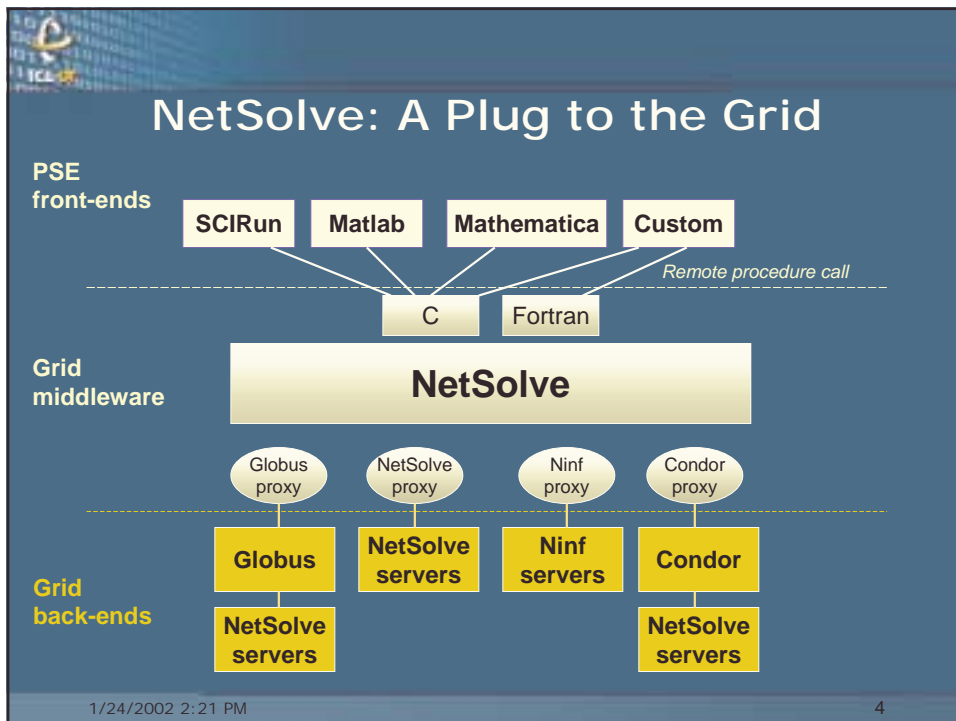
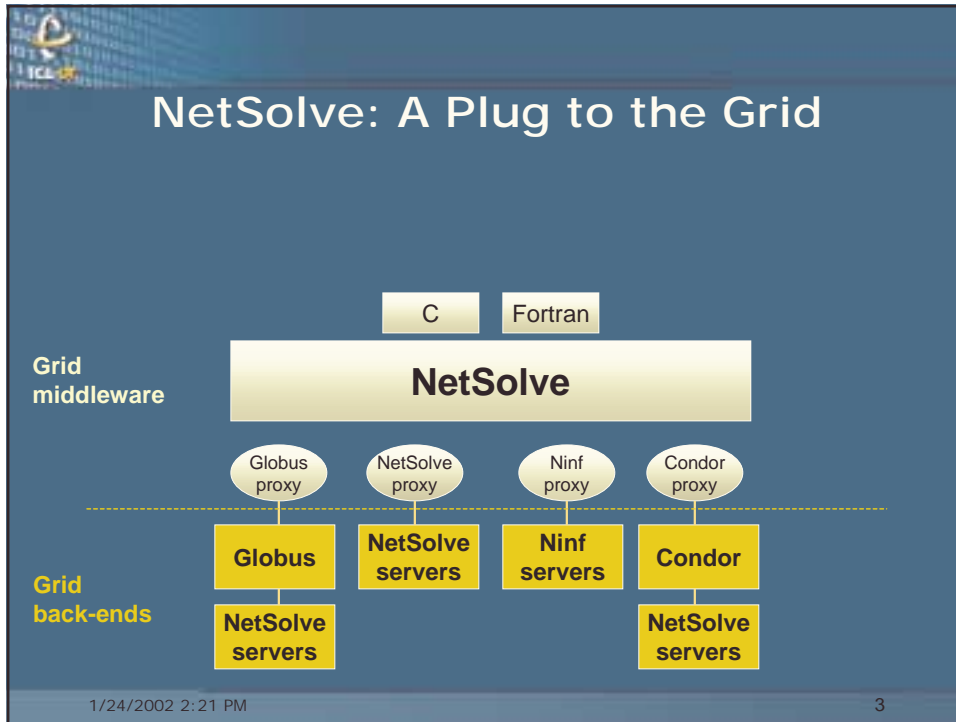
Grid middleware

C Fortran

NetSolve

Globus proxy NetSolve proxy Ninf proxy Condor proxy

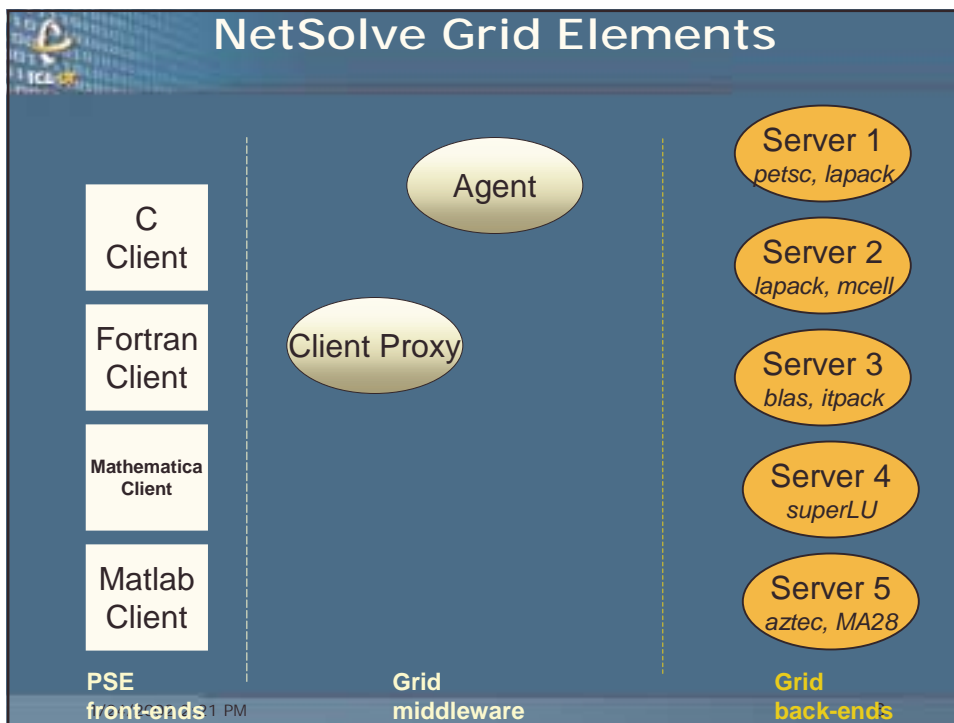
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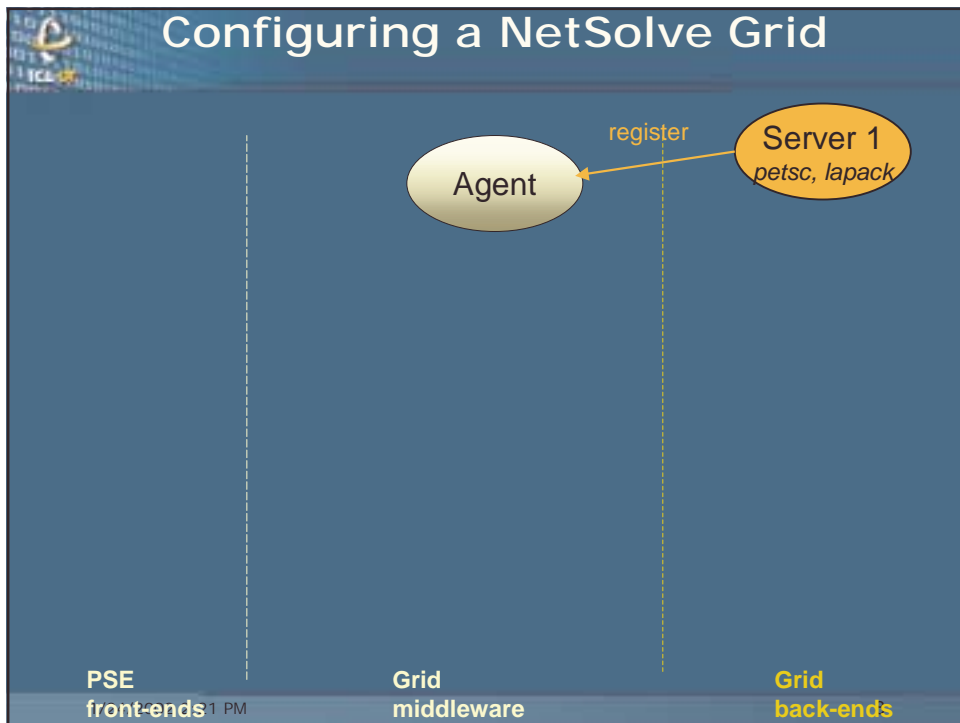
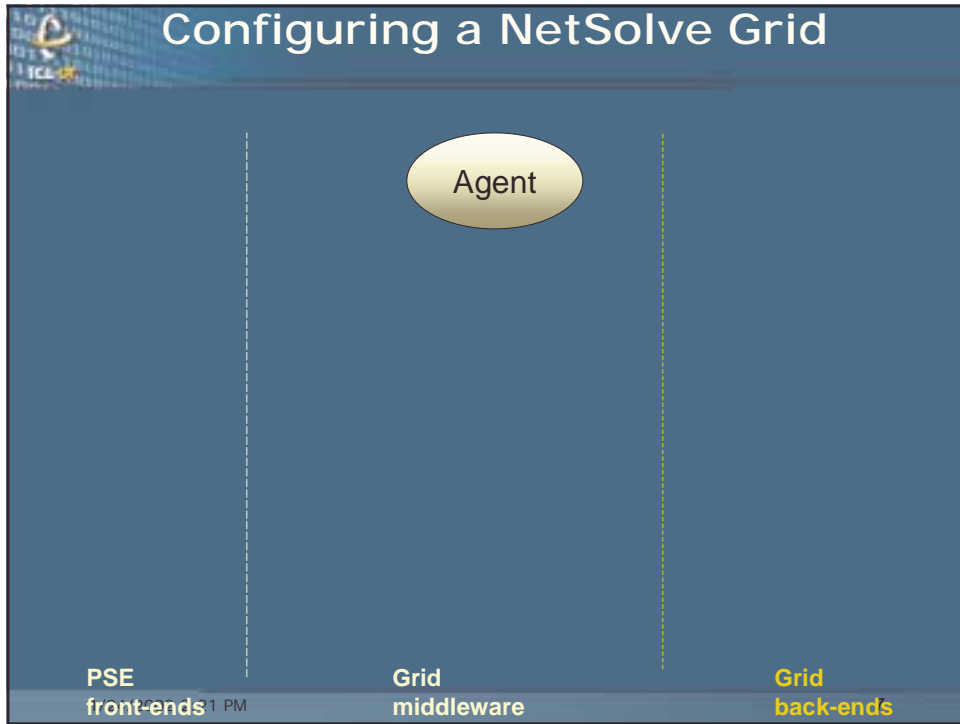


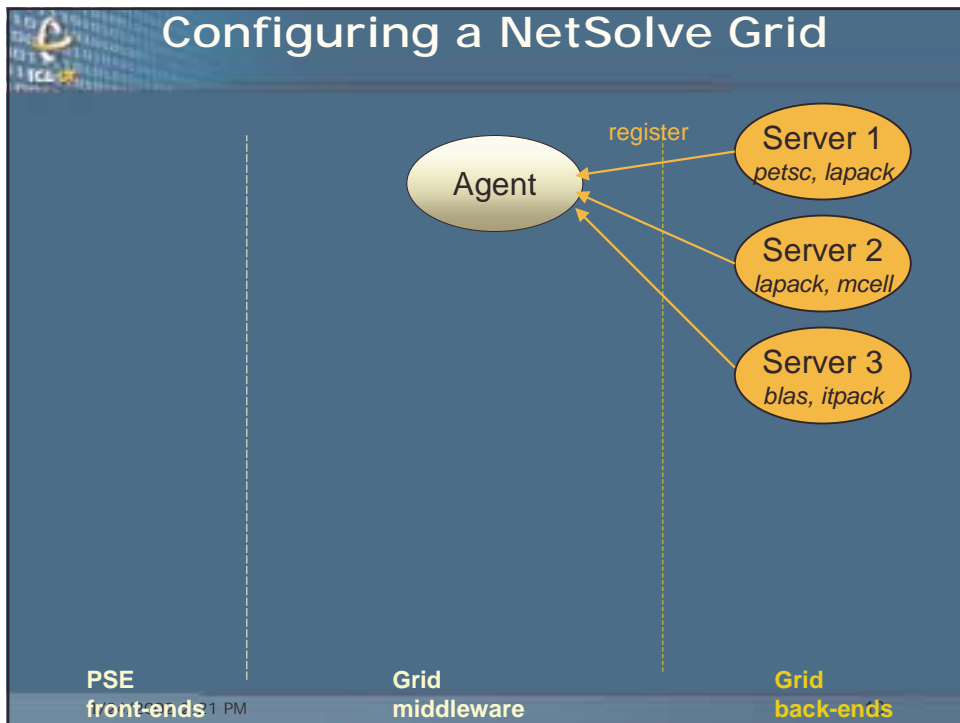
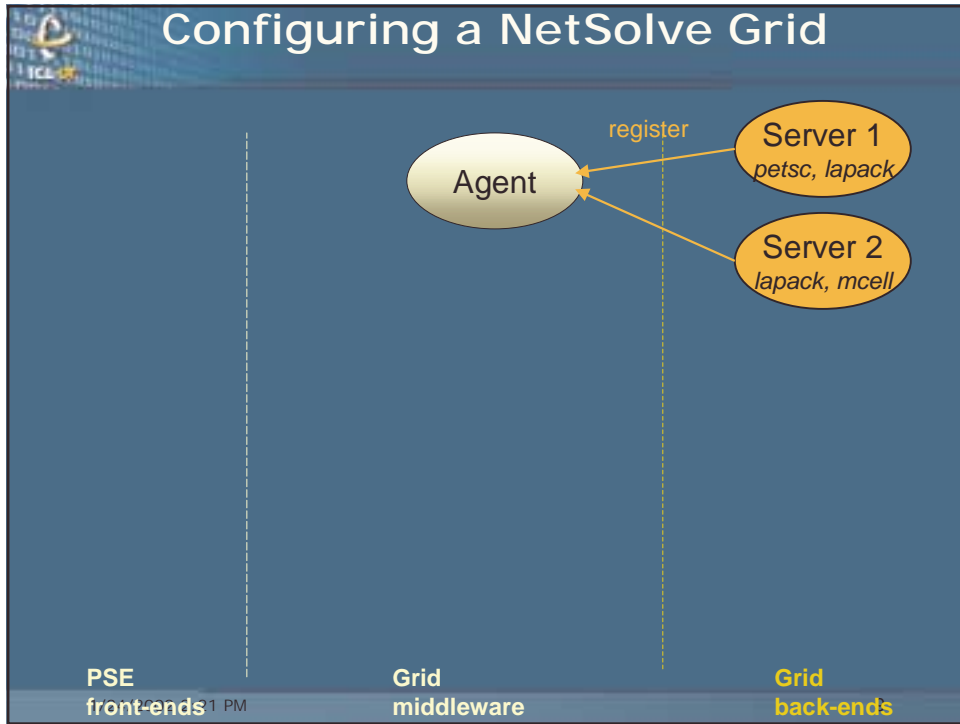
NetSolve Philosophy

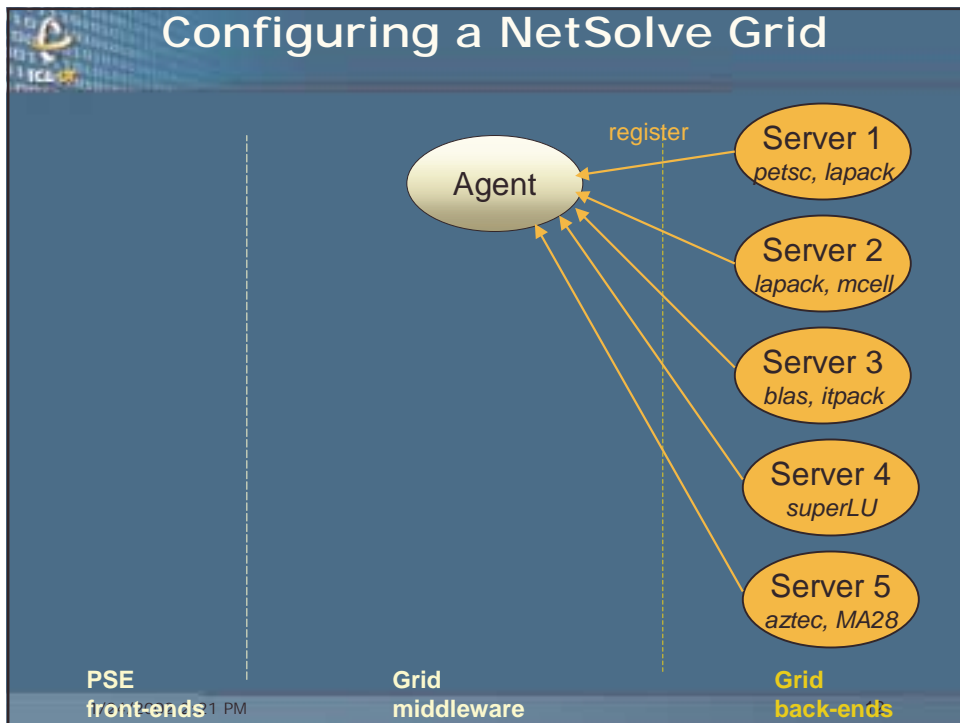
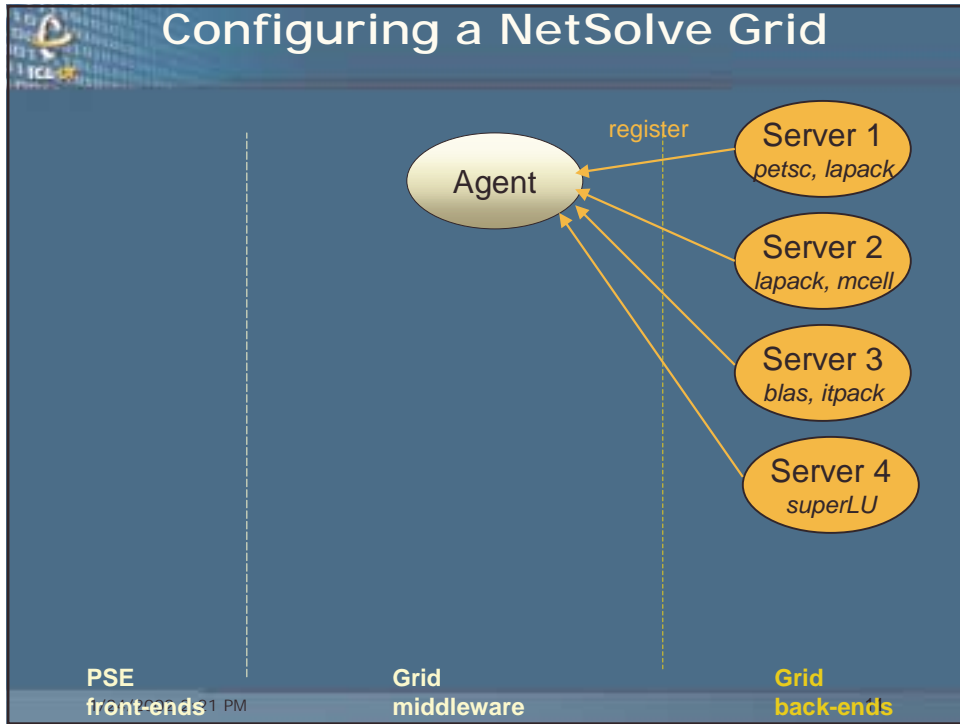
- Simple-to-use access to complicated software libraries
- Access to *better* hardware and software
- Selection of best machine in your grid to service user request
- Heterogeneous computing
- Portability
 - non-portable code can be run from a client on any architecture as long as there is a server provisioned with the code
- Legacy codes easily wrapped into services

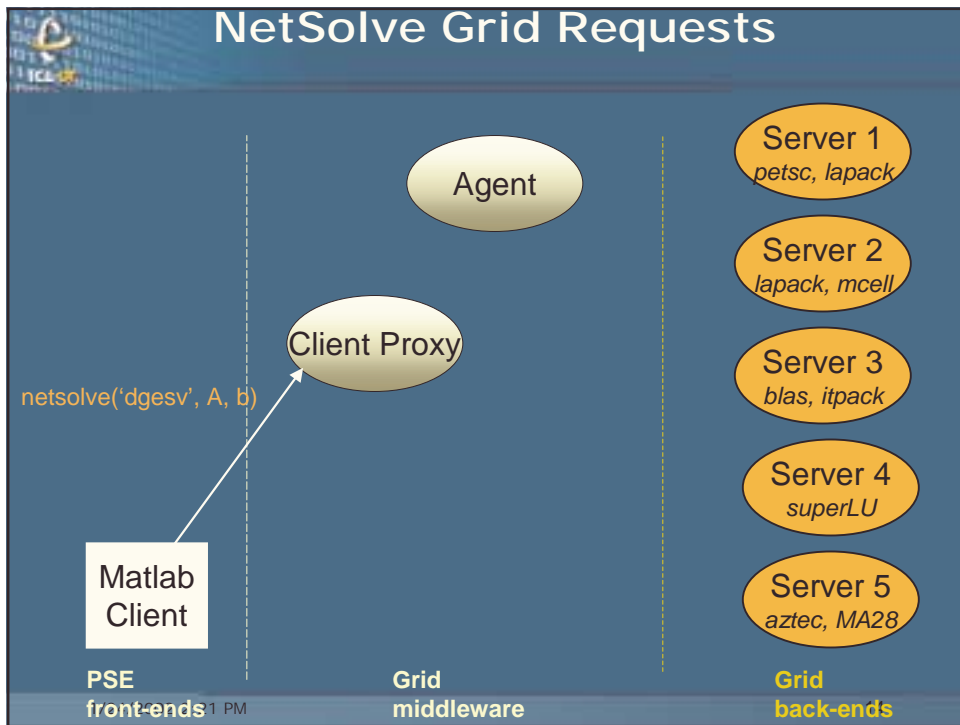
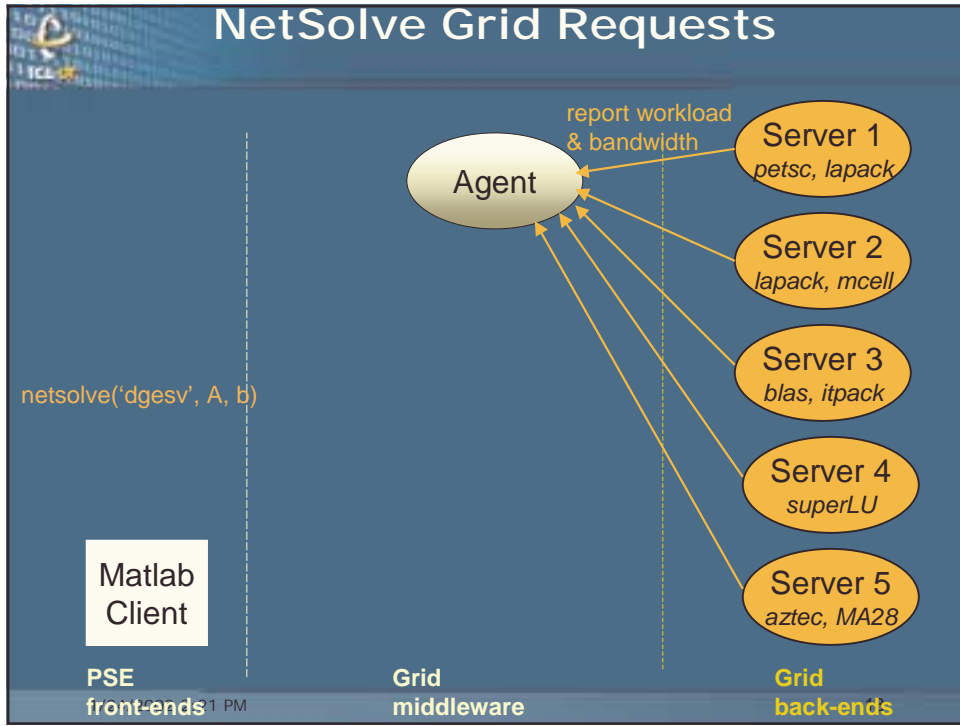
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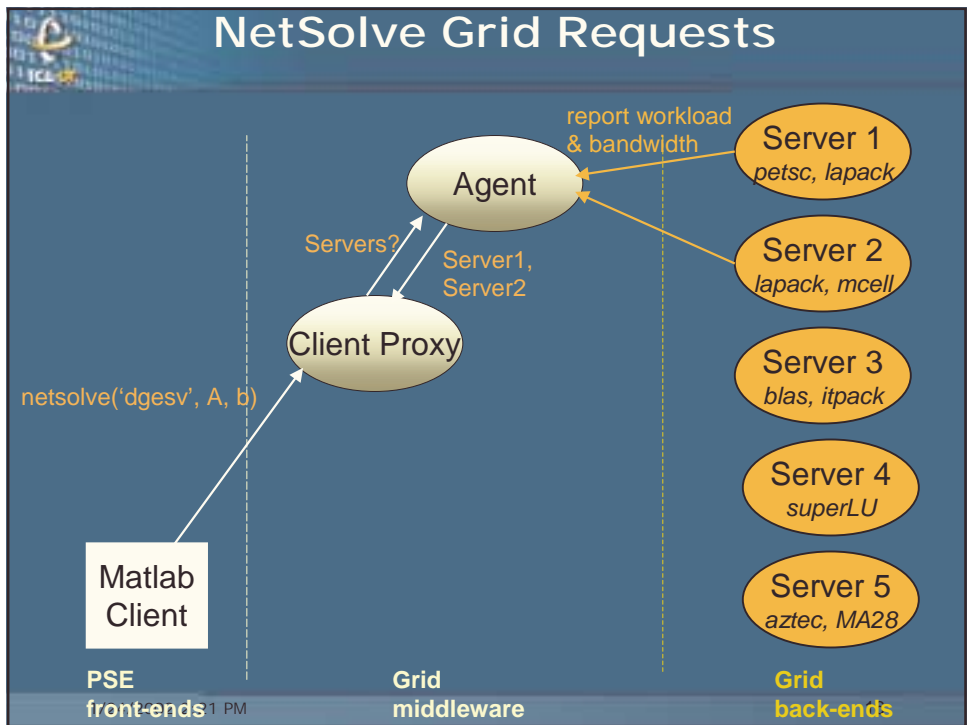
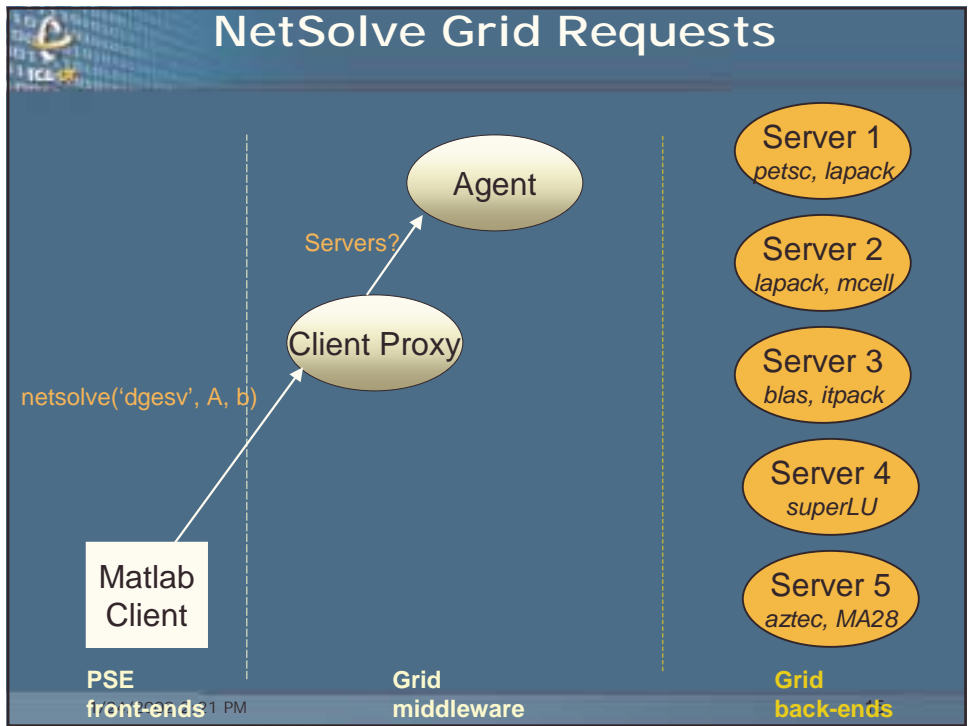


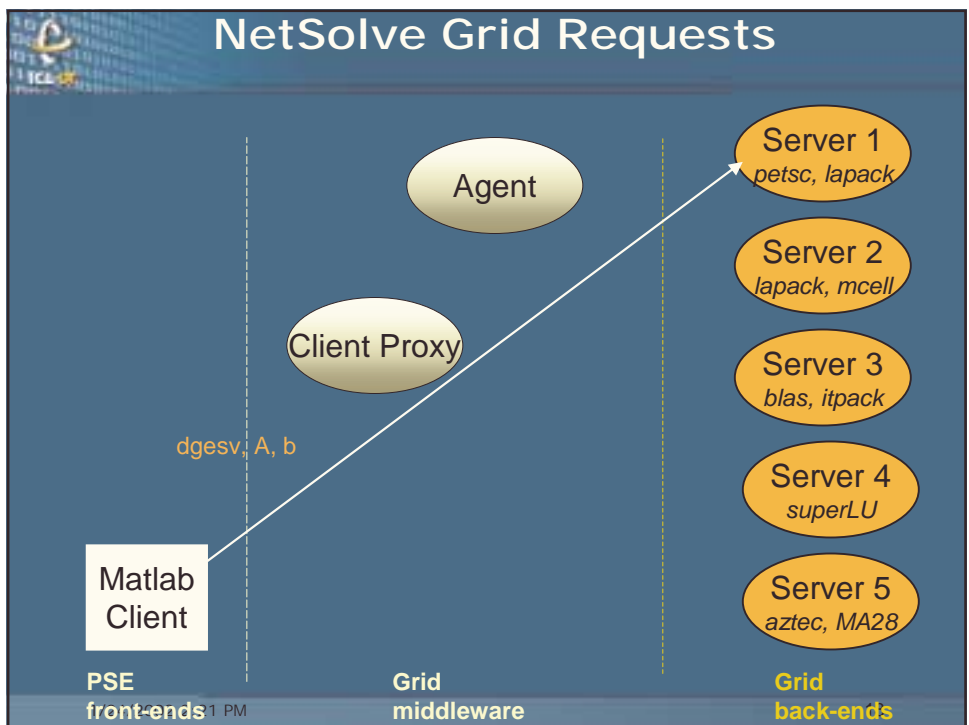
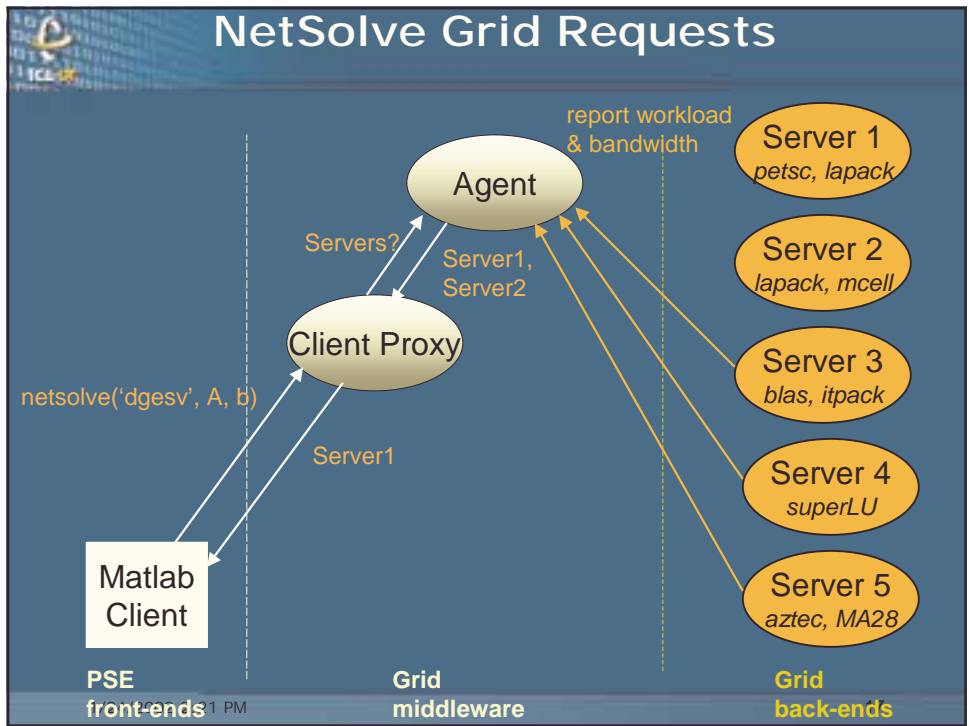


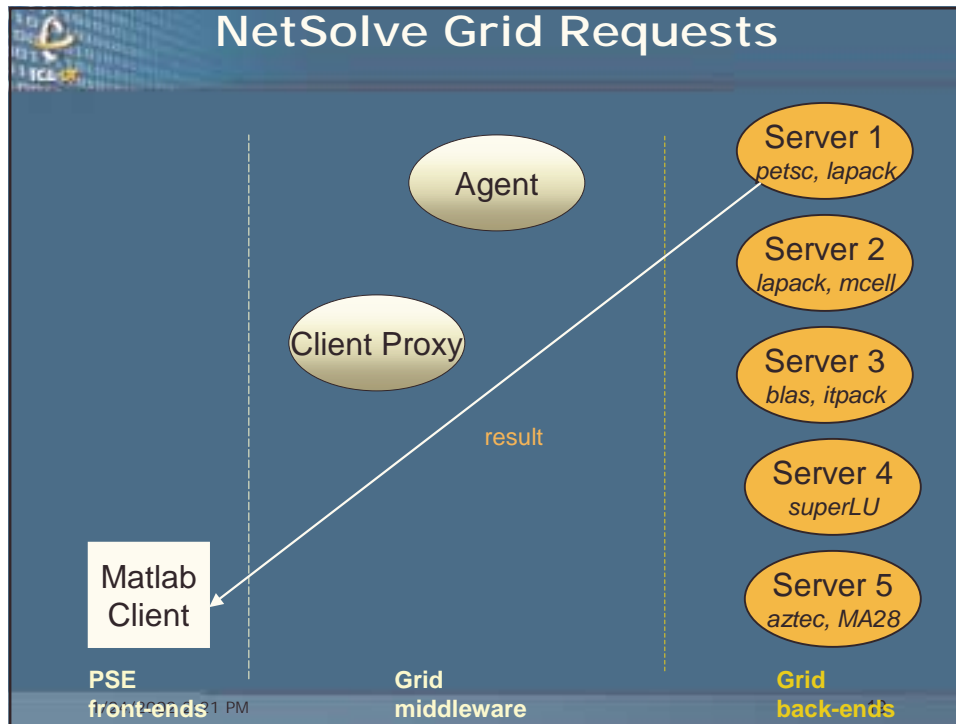




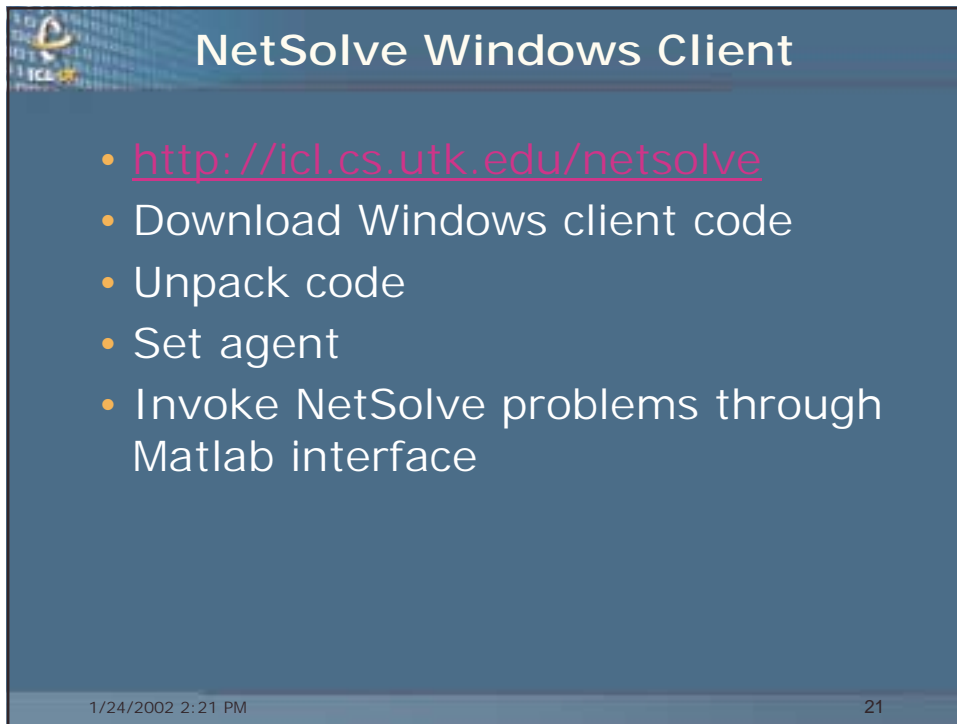








- ### NetSolve UNIX Client
- <http://icl.cs.utk.edu/netsolve>
 - Currently running grid and supported problems
 - Download UNIX code
 - Unpack and configure
 - make C and tester
 - Set agent
 - Run C test
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NetSolve Windows Client

- <http://icl.cs.utk.edu/netsolve>
- Download Windows client code
- Unpack code
- Set agent
- Invoke NetSolve problems through Matlab interface

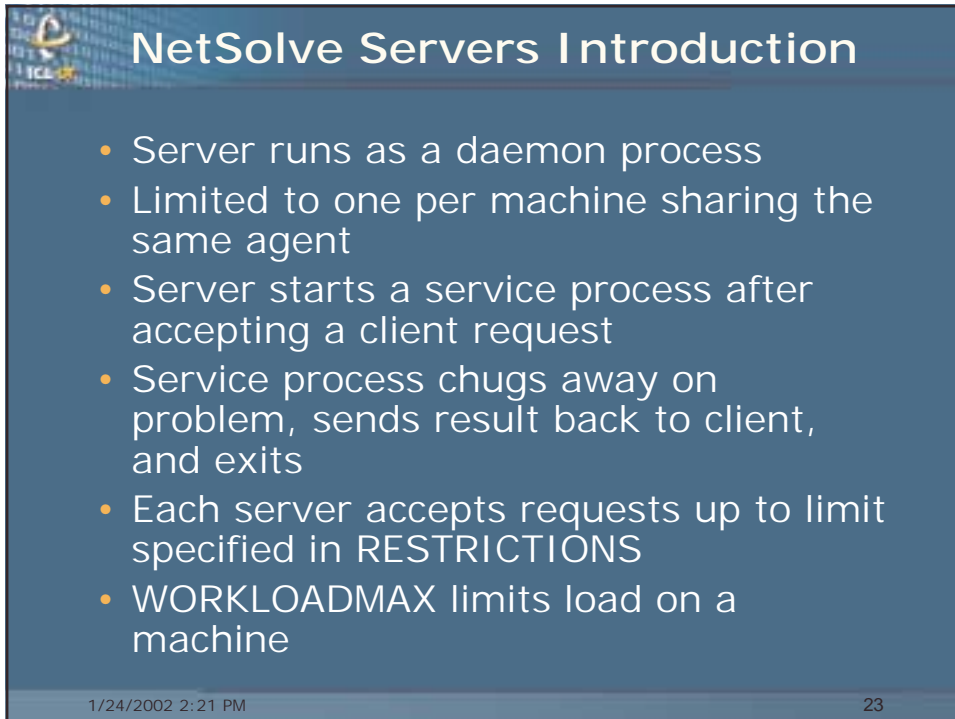
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NetSolve Tools

- NetSolve grid management and status inquiry
- NS_conf <agent>
 - Lists machines in grid (agent/servers)
- NS_problems <agent>
 - List of problems known by agent
- NS_probdesc <agent> <problem>
- NS_killagent <agent>
- NS_killserver <agent> <server>
- NS_killall <agent>

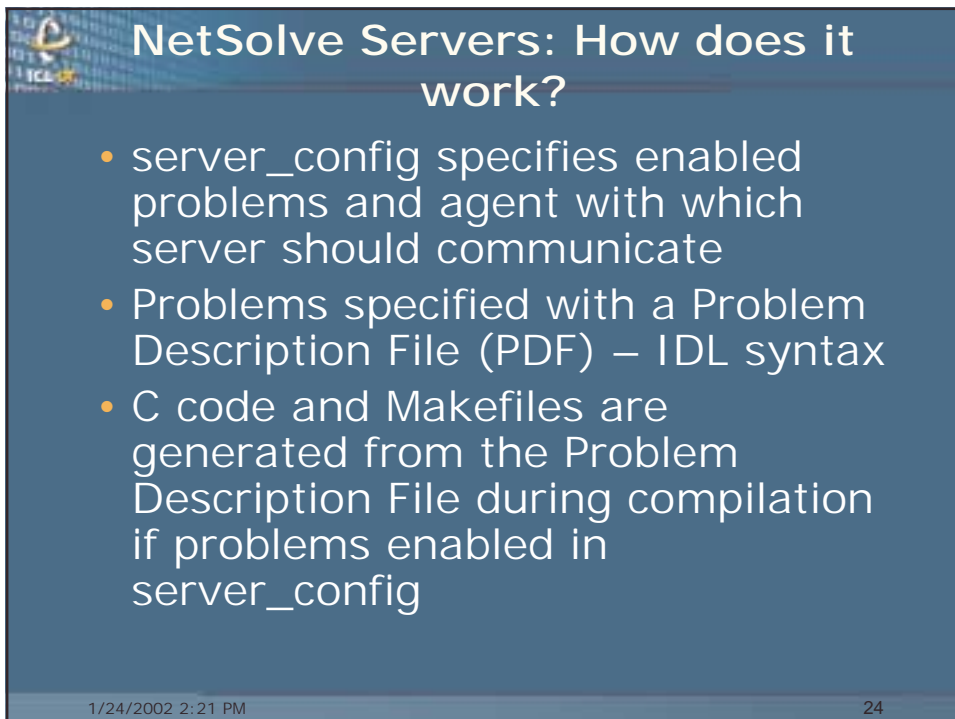
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NetSolve Servers Introduction

- Server runs as a daemon process
- Limited to one per machine sharing the same agent
- Server starts a service process after accepting a client request
- Service process chugs away on problem, sends result back to client, and exits
- Each server accepts requests up to limit specified in RESTRICTIONS
- WORKLOADMAX limits load on a machine


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NetSolve Servers: How does it work?

- server_config specifies enabled problems and agent with which server should communicate
- Problems specified with a Problem Description File (PDF) – IDL syntax
- C code and Makefiles are generated from the Problem Description File during compilation if problems enabled in server_config

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NetSolve Agent

- Make agent or make standard
- Start agent on a machine
- Edit server_config to start servers that make use of that agent
- Logfiles for agent and server
 - \$NETSOLVE_ROOT/nsagent.log
 - \$NETSOLVE_ROOT/nsserver.log
 - Or specify filename/location at agent and server startup
 - Feedback about the state of the grid

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