HyperLynx® 3D EM

Distributed Computing - LSF and GRID

Software Version 15.2

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Chapter 1
Distributed Computing

HyperLynx 3D EM can run simulations with computer clusters that run distributed computing software from third-party vendors, such as Platform LSF (load sharing facility) or Oracle Grid Engine software.

Note

To use the legacy distributed computing service and agent that ships with HyperLynx 3D EM, refer to instructions in the *HyperLynx 3D EM Distributed Simulation Guide*.

This chapter contains the following:

Distributed Computing Overview

Distributed computing provides the following benefits:

- Shorten the overall simulation runtime—Take a simulation with a long runtime and many standalone problems to solve (such as simulating geometry behavior over a set of frequencies) and send it to the computer cluster, where the overall simulation is split into multiple simulation jobs and distributed to individual computers in the cluster.
- Free up your computer from running many shorter simulations—Take simulations with a short runtime and send them to the computer cluster, where computers in the cluster run the simulation.

Figure 1-1 shows a conceptual diagram for distributed computing.

Figure 1-1. Distributed Computing Diagram

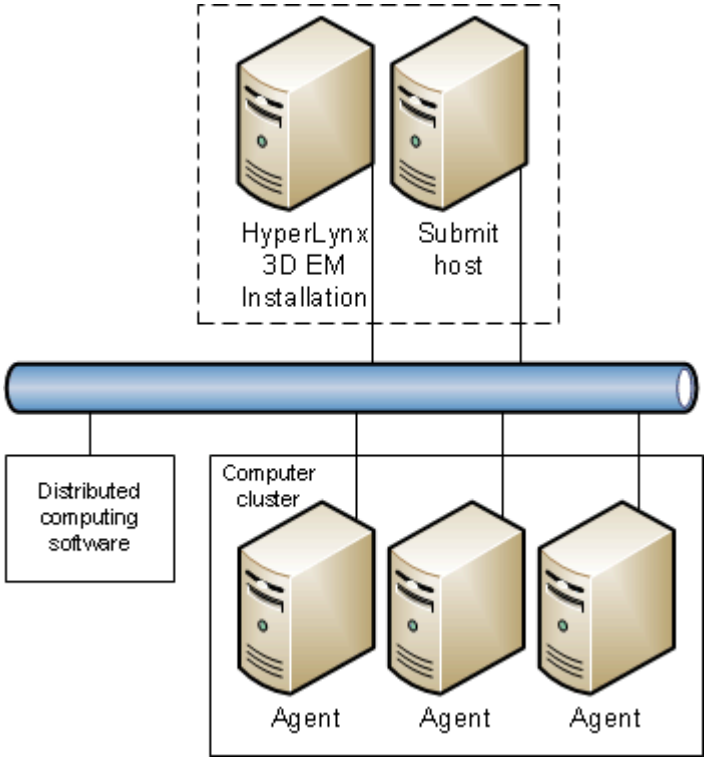


Table 1-1. Distributed Computing Diagram Contents

Symbol	Description
HyperLynx 3D EM installation	Shared folder containing an HyperLynx 3D EM installation. The folder can be located either on the network or on a computer. The dashed line indicates that the same computer can optionally contain the HyperLynx 3D EM installation and serve as a submit host.

Table 1-1. Distributed Computing Diagram Contents (cont.)

Symbol	Description
Submit host	A computer that can submit jobs to distributed computing software, but does not run jobs. Submit hosts provide you a way to run distributed simulation without logging into an agent. Your company installs the distributed computing software on the computer and configures it to serve as a submit host. The submit host can access a Mentor Graphics license server. Use the MGLS_LICENSE_FILE environment variable to point to the license file and server name. See the Licensing chapter in *Managing Mentor Graphics* HyperLynx 3D EM *Software*. The dashed line indicates that the same computer can optionally contain the HyperLynx 3D EM installation and serve as a submit host. If the installation is only on the submit host, it must be located on a shared drive or folder, so that all agents can access it. You either log in to a submit host or an agent computer to open HyperLynx 3D EM and run distributed simulation.
Distributed computing software	Software that manages simulation job requests from the HyperLynx 3D EM installation, distributes jobs to available agents, and returns completed jobs to the HyperLynx 3D EM installation. Distributed computing software links individual computers (that is, agents) into a cluster. It also manages job distribution so that the work load is balanced and prioritized among agents. Figure 1-1 does not attempt to show the detailed infrastructure implemented by distributed computing software, such as server hosts, job scheduler, and so on. Your company purchases and configures distributed computing software from a third-party vendor, such as Platform LSF and Oracle Grid Engine (previously known as Sun Grid Engine or SGE). HyperLynx 3D EM also provides a generic interface for open source distributed computing solutions that support exactly the same set of commands used by Oracle Grid Engine (Sun Grid). The distributed computing software version is not important.

Table 1-1. Distributed Computing Diagram Contents (cont.)

Symbol	Description
Computer cluster	Multiple computers on the same local area network that work together to run jobs. A computer cluster is also known as a high-performance computing (HPC) cluster, computer grid, and computer farm.
Agent	An individual computer in the computer cluster. You either log in to a submit host or an agent computer to open HyperLynx 3D EM and run distributed simulation. If you do not use a submit host, the agent can access a Mentor Graphics license server. Use the MGLS_LICENSE_FILE environment variable to point to the license file and server name. See the Licensing chapter in *Managing Mentor Graphics* HyperLynx 3D EM *Software*.

Installing HyperLynx 3D EM in a Shared Location

Install HyperLynx 3D EM in a folder that is located on the same local area network as the computer cluster, so that all agents can access it. This folder can be located on the network or on a computer and has permissions that enable others to execute and read files in the folder.

Procedure

1. See the HyperLynx 3D EM *Installation Instructions* for general information about installing Mentor Graphics software.
2. From the Mentor Graphics Install program, on the Product Selection page, select **IE3D EM Designer**.

   Note: The distributed computing products in the figure below refer to the legacy HyperLynx 3D EM distributed computing feature for Windows that this document does not describe. To use the legacy distributed service and agent that ships with HyperLynx 3D EM, refer to instructions in the *IE3D Distributed Simulation Guide*.

3. To run distributed simulation on both Windows and Linux agents, repeat step 2 on an agent running on the other operating system.
4. If you install HyperLynx 3D EM in a local folder on a Windows computer, share the folder so agents on the network can access the local files:
   a. Open Windows Explorer and browse to the folder containing the root of the Mentor Graphics installation tree. For example, C:\MentorGraphics.
   b. Right-click the folder and share it, using the set of steps appropriate for the version of Windows and the security policy the computer runs.

      For example, on Windows 7, the procedure is **Right-click folder** > select **Share with > Specific people** > from the File Sharing dialog box, enter a share name and select people and file permissions > **Share**.

      You will use the share name in "Configuring HyperLynx 3D EM Distributed Simulation" on page 12, in the step where you Open an HyperLynx 3D EM simulation file.

Related Topics

"Configuring HyperLynx 3D EM Distributed Simulation" on page 12

"Distributed Computing" on page 7

Configuring HyperLynx 3D EM Distributed Simulation

Configure HyperLynx 3D EM and the distributed computing software so they can access each other.

Prerequisites

The ie3dcpucore license is required to run distributed simulation. Each simulation frequency consumes one license. For example, if you run distributed simulation and specify five licenses, then distributed computing can run five frequencies at a time.

You can log in to either a submit host or an agent in the computer cluster.

You have installed HyperLynx 3D EM in a shared folder that all agents can access. See "Installing HyperLynx 3D EM in a Shared Location" on page 10, step 4.

You have located HyperLynx 3D EM simulation files in a shared folder that all agents can access.

You have an HyperLynx 3D EM simulation file (.SIM) to open, to test the setup. The HyperLynx 3D EM installation contains sample simulation files in the \MentorGraphics\<release>\SDD_HOME\IE3D\ie3d\samples folder.

To run on a Linux agent, obtain or write a startup file that configures the shell user environment to use the distributed computing environment. Contact the distributed computing software administrator or refer to the documentation provided by the distributed computing software.

Procedure

1. Log in to a submit host or agent computer.

   If you will run LSF and this is your first time using it, register a password with LSF by running the **lspasswd** command. This is a one-time only step.

2. If the computer is running Linux, source the startup file that you have received from the distributed computing software administrator or wrote yourself.

   You may want to add the contents of this file to your .profile (Bourne, Korn) or .cshrc (C shell) file, so you do not have to manually perform this step every time you start a distributed simulation session.

3. Verify the submit host or agent can communicate with the computer cluster.
   a. Open a command shell (Windows) or terminal (Linux).
   b. Enter the command to list available agents.

      LSF: **bhosts**

      Oracle Grid Engine/Sun Grid Engine/open source solutions: **qstat -f**
   c. If you get a listing of hosts, or at least a non-error response, proceed to the next step. Otherwise contact your distributed computing software administrator for help.
4. Configure HyperLynx 3D EM to interface with the distributed computing software.
   a. Using a file manager or command window, cd to the HyperLynx 3D EM installation **\MentorGraphics\<release>\SDD_HOME\IE3D\exe** (Windows) or **/MentorGraphics/<release>/SDD_HOME/IE3D/bin32 or bin64** (Linux)
   b. Run **dsview.exe** (Windows) or **./start_app dsview** (Linux). The Distributed Service Browser Dialog Box opens.
   c. Open an HyperLynx 3D EM simulation file.
      - Select **Process > New simulation >** browse to an HyperLynx 3D EM .SIM or .TXT simulation file.

      If the simulation files are located on a shared drive on a Windows or Linux computer, you can eliminate computer name resolution errors by browsing to the computer by its static IP address. For example, if the share name you created is “project” and the static IP address for the Windows computer with the shared drive is 00.00.00.00, browse to \\00.00.00.00\project\<simulation_file>.

      If the network location has a network drive mapped to it and you use this network drive (for example, U:\) to browse to the file, use the Distributed Service Shared Directory Mapping Dialog Box to specify where this drive points to (for example, \\network\dfs\projects).

      Note: The HyperLynx 3D EM installation contains sample simulation files in the \MentorGraphics\<release>\SDD_HOME\IE3D\ie3d\samples folder.
   d. On the Distributed Service Options Dialog Box - General Tab, do the following:
      i. Select a value from the **Service** list:

         MultiSim—Schedule multiple simulations on the local computer by automatically queuing them. Note that any computer can run MultiSim and it does not have to be a submit host or agent.

         LSF—Send simulations to Platform LSF distributed computing software.

         Sun Grid—Send simulations to Oracle Grid Engine (previously known as Sun Grid Engine or SGE) distributed computing software. Also select this option to

use open source distributed computing software that supports exactly the same set of commands used by Oracle Grid Engine (Sun Grid).

ii. Enter a value in the **No. of License** field. Specifies the number of simulation jobs to run concurrently. Each simulation frequency consumes one license. For example, if you run distributed simulation and specify five licenses, then distributed computing can run five frequencies at a time.

iii. Enter a value in the **Cores/License** field, which represents how many cores per CPU to use per license.

This option counts logical CPU cores, if they exist. Some CPUs implement two logical cores for each physical core. For example, if the CPU has eight logical cores formed by four physical cores, then distributed computing software can consume eight cores per license.

If the computer has two CPUs with four physical cores and eight logical cores, you may get better performance if you use two CPUs and four cores each instead of one CPU and eight cores. (For edample:
CPU #: 2, Core #: 4 or CPU#: 1, Core #: 8)

iv. Enter the folder containing the HyperLynx 3D EM executable files in the **Application File Path** field(s).

Examples:

\\user\dfs\<user>\MentorGraphics\<release>\SDD_HOME\IE3D\exe

\\00.00.00.00\MentorGraphics\<release>\SDD_HOME\IE3D\exe

/home/<user>/MentorGraphics/<release>/SDD_HOME/IE3D/exe

If the HyperLynx 3D EM executable files are located on a Windows shared drive, you can eliminate computer name resolution errors by browsing to the computer by its static IP address. For example, if the share name you created in step 4 (in “Installing HyperLynx 3D EM in a Shared Location” on page 10) is “MentorGraphics” and the static IP address for the computer with the shared drive is 00.00.00.00, browse to \\00.00.00.00\MentorGraphics.

e. When you install HyperLynx 3D EM software or Mentor Graphics license software, the environment usually points to the Mentor Graphics license file location. If the submit host or agent environment does not already point to the Mentor Graphics license software location, do the following:

i. Linux—On the **Linux** tab, enter one of the following:

Platform LSF (Bash shell syntax):

MGLS_LICENSE_FILE=<port>@<host>

export MGLS_LICENSE_FILE

Oracle Grid Engine (Sun Grid; c-shell syntax):

setenv MGLS_LICENSE_FILE <port>@<host>

If you specify multiple license servers, separate them with a colon : .

ii. Windows—On the **Win32** tab, enter **set MGLS_LICENSE_FILE <port>@<host>**

If you specify multiple license servers, separate them with a semicolon ; .

5. Verify the distributed simulation configuration by running a simulation by clicking **OK**.

   Result: Simulation results are written to a sub-folder named Output in the folder containing the .SIM simulation file.

Related Topics

"Dialog Box Reference" on page 20

"Distributed Computing" on page 7

Running HyperLynx 3D EM Distributed Computing

Launch HyperLynx 3D EM simulations, monitor simulation status, and view results.

Prerequisites

You have configured and tested the interface between HyperLynx 3D EM and the distributed computing software. See "Configuring HyperLynx 3D EM Distributed Simulation" on page 12.

You have located HyperLynx 3D EM simulation files in a shared folder that all agents can access.

The ie3dcpucore license is required to run distributed simulation.

Procedure

1. Log in to a submit host or agent computer.
2. If the computer is running Linux, source the startup file that you have received from the distributed computing software administrator or wrote yourself.

   You may want to add the contents of this file to your .profile (Bourne, Korn) or .cshrc (C shell) file, so you do not have to manually perform this step every time you start a distributed simulation session.

3. Launch simulation.

a. Using a file manager or command window, cd to the HyperLynx 3D EM installation **\MentorGraphics\<release>\SDD_HOME\IE3D\exe** (Windows) or **/MentorGraphics/<release>/SDD_HOME/IE3D/bin32 or bin64** (Linux).

b. Run **dsview.exe** (Windows) or **./start_app dsview** (Linux). The Distributed Service Browser Dialog Box opens.

c. Open an HyperLynx 3D EM simulation file.

- Select **Process > New simulation >** browse to an HyperLynx 3D EM .SIM or .TXT simulation file.

If the simulation files are located on a shared drive on a Windows or Linux computer, you can eliminate computer name resolution errors by browsing to the computer by its static IP address. For example, if the share name you created is “project” and the static IP address for the Windows computer with the shared drive is 00.00.00.00, browse to \\00.00.00.00\project\<simulation_file>.

If the network location has a network drive mapped to it and you use this network drive (for example, U:\) to browse to the file, use the Distributed Service Shared Directory Mapping Dialog Box to specify where this drive points to (for example \\network\dfs\projects.

d. On the Distributed Service Options Dialog Box - General Tab, do the following:

i. Select a value from the **Service** list:

MultiSim—Schedule multiple simulations on the local computer by automatically queuing them. Note that any computer can run MultiSim and it does not have to be a submit host or agent.

LSF—Send simulations to Platform LSF distributed computing software.

Sun Grid—Send simulations to Oracle Grid Engine (previously known as Sun Grid Engine or SGE) distributed computing software. Also select this option to use open source distributed computing software that supports exactly the same set of commands used by Oracle Grid Engine (Sun Grid).

ii. Enter a value in the **No. of License** field. Specifies the number of simulation jobs to run concurrently. Each simulation frequency consumes one license. For example, if you run distributed simulation and specify five licenses, then distributed computing can run five frequencies at a time.

iii. Enter a value in the **Cores/License** field, which represents how many cores per CPU to use per license.

This option counts logical CPU cores, if they exist. Some CPUs implement two logical cores for each physical core. For example, if the CPU has eight logical cores formed by four physical cores, then distributed computing software can consume eight cores per license.

If the computer has two CPUs with four physical cores and eight logical cores, you may get better performance if you use two CPUs and eight cores instead of one CPU and eight cores.

e. Optionally, on the **Hosts** tab, select one or more hosts (agents) for better control over which computers can execute the job. For example, if you are running software in a a 64-bit installation, select only 64-bit computers to avoid running jobs on 32-bit computers.

   You may want to select powerful agent(s) at critical times in your project.

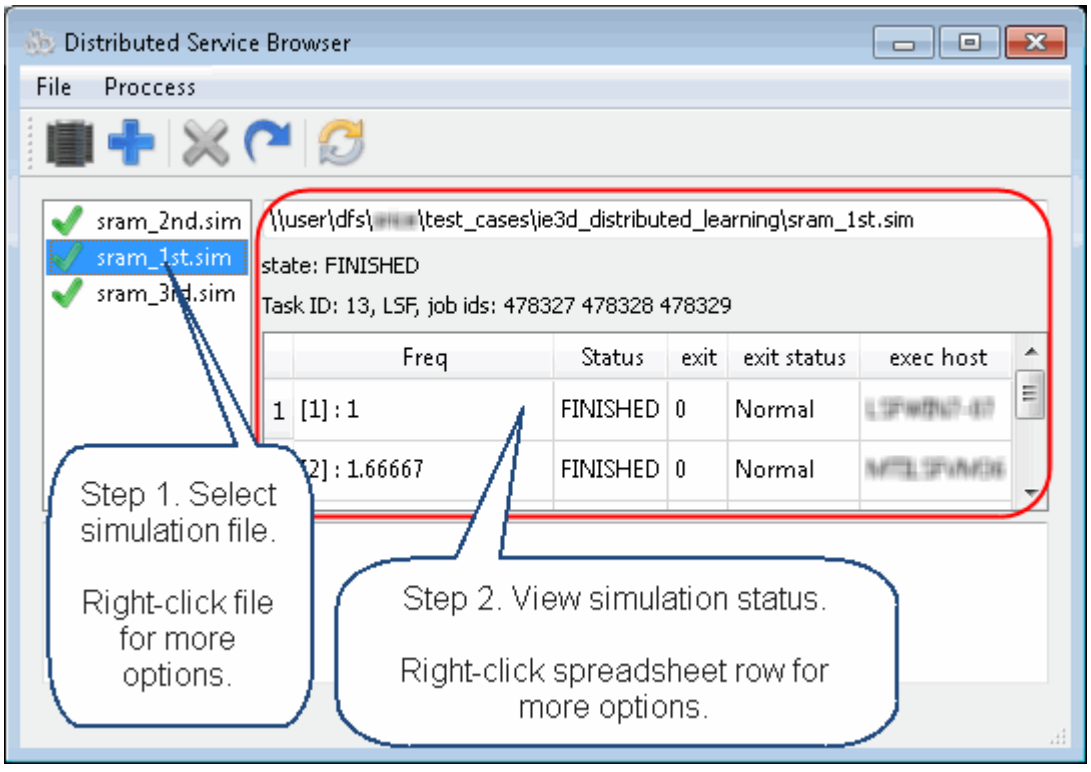
f. Optionally, on the **Queues** tab, select one or more queues.

   The default queue is used unless you select another queue.

   You may want to select high-priority queues at critical times in your project.

4. Monitor simulation status.

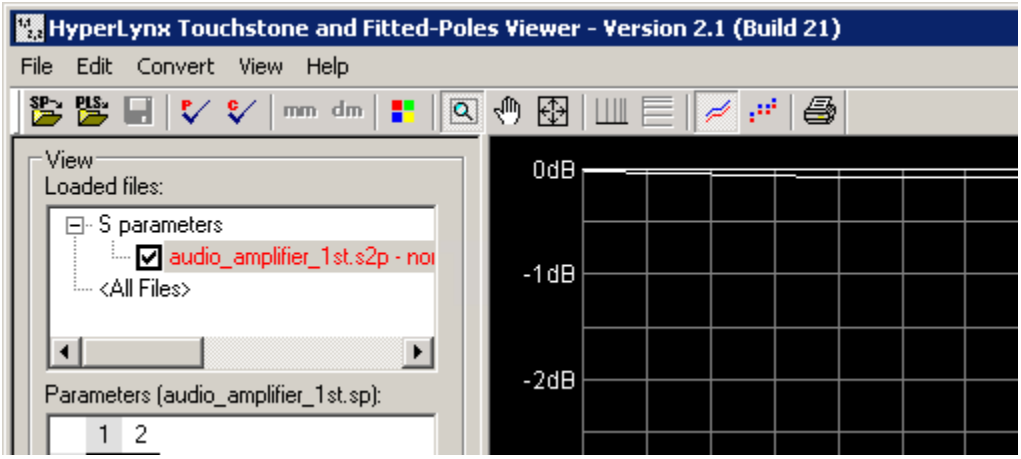
   The spreadsheet in the Distributed Service Browser Dialog Box displays simulation status for the selected simulation file.



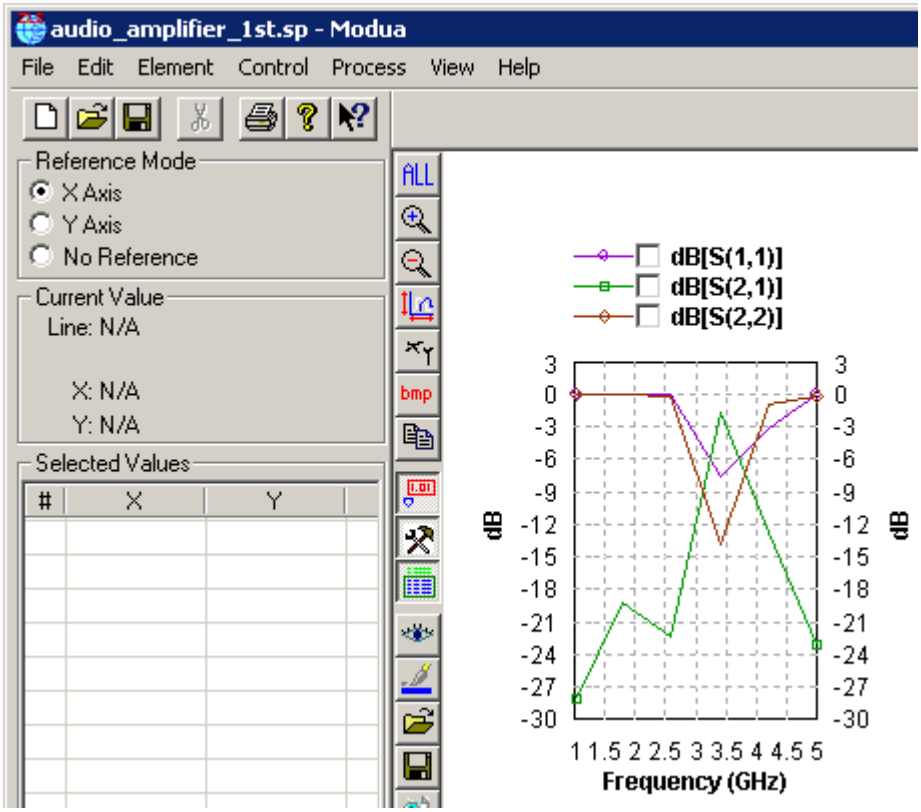
5. View simulation results.

   When all the simulation jobs finish and a green check mark is displayed next to the job name, you can do any of the following:

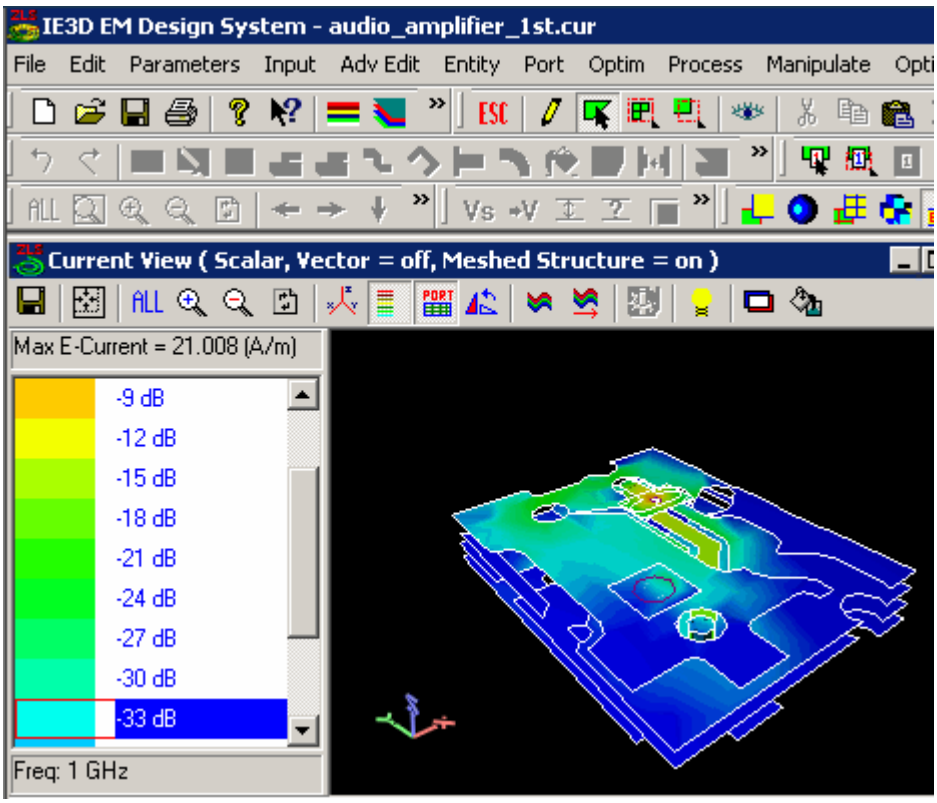
- Display S-parameters with the Touchstone Viewer (TouchstoneViewer.exe on Windows). S-parameter files are located in the folder that contains the simulation files. You can open this folder from the Distributed Service Browser by right-clicking the job name and clicking **Open**.



- Display S-parameters with Modua (Modua.exe on Windows). S-parameter files are located in the folder that contains the simulation files. You can open this folder from the Distributed Service Browser by right-clicking the job name and clicking **Open containing folder**.



- Display current density animations with IE3D EM Design System (MGrid.exe on Windows). The .cur files are located in the **output** sub-folder in the the folder containing the simulation file.



Note: The above applications are located in **\MentorGraphics\<release>\SDD_HOME\IE3D\exe** (Windows) or **/MentorGraphics/<release>/SDD_HOME/IE3D/bin32 or bin64** (Linux).

6. Troubleshoot pending or failed simulations.

   If you selected LSF or Sun Grid and the simulation status remains pending (PEND) for a long time, see if there are many jobs ahead of you in the queue. For the command to display the job queue, see step 3.b in "Configuring HyperLynx 3D EM Distributed Simulation" on page 12. If the queue is very long, you may consider running the job on the local computer with the MultiSim option.

   If the simulation crashes or ends abnormally, right-click the job name or spreadsheet row and click one or both of the following files to look for clues:

   - Open log file [log_file]
   - Display error from [error_file]

   Log files are written either to the **output** folder within the folder containing the simulation file (.SIM or .TXT) or a folder you specify in the Distributed Service Options Dialog Box - Advanced Tab.

Related Topics

"Dialog Box Reference" on page 20

"Distributed Computing" on page 7

Dialog Box Reference

This section contains the following:

Related Topics

"Distributed Computing" on page 7

Distributed Service Browser Dialog Box

To access: Run **dsview.exe** (Windows) or **./start_app dsview** (Linux)

Use this dialog box to launch, monitor, and manage simulations.

Figure 1-2. Distributed Service Browser Dialog Box

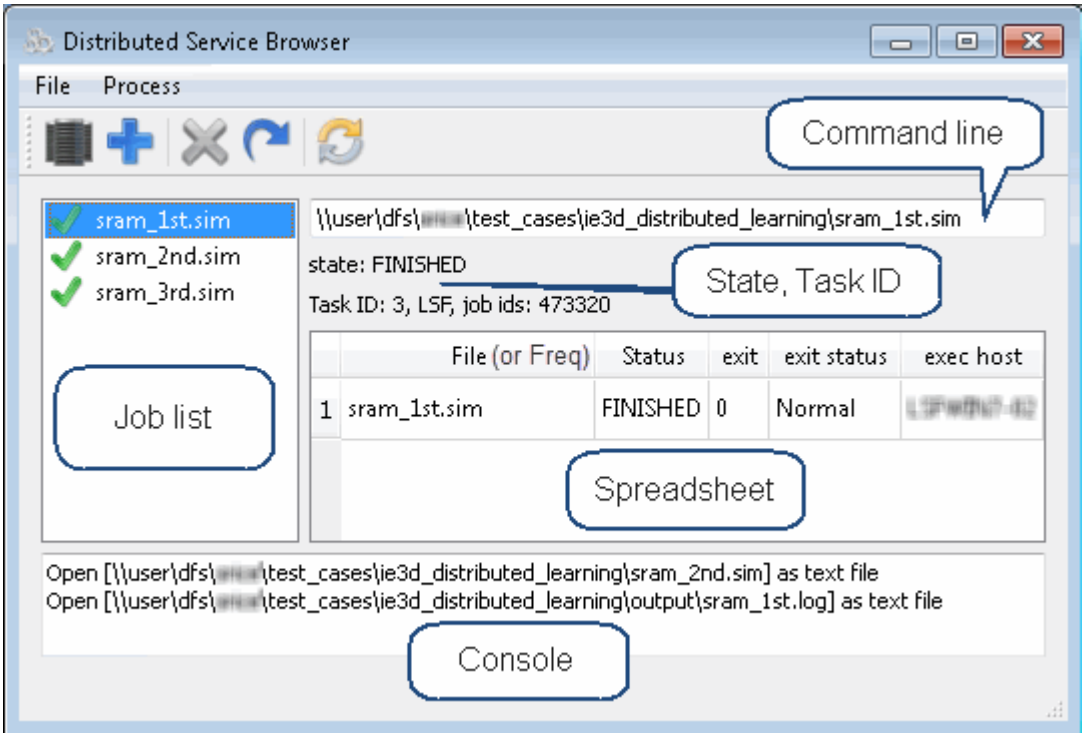


Table 1-2. Distributed Service Browser Dialog Box Contents

Option	Description
File > Refresh 	Refreshes the contents of the job list.
File > Shell command	Runs the text selected in the Console area as a shell command.
File > Options	Opens the Distributed Service Shared Directory Mapping Dialog Box.
Process > New simulation 	Selects an HyperLynx 3D EM .SIM/.TXT simulation file.

Table 1-2. Distributed Service Browser Dialog Box Contents (cont.)

Option	Description
Process > Create and start a batch simulation 	Selects an HyperLynx 3D EM .SIM/.TXT batch simulation file.
Process > Terminate simulation 	Stops simulation of the selected job list item. **Restriction:** This option is unavailable unless you select a simulation that is running.
Process > Re-submit 	Runs simulation on selected job list item. You might do this when you previously submitted the simulation, but it failed to run to completion.
Simulation list	Displays submitted and completed simulations. Selecting an item updates the contents of the right-side of the dialog box, including the simulation state and Task ID values. Right-click a simulation to display the following options: • Open [simulation_file] as text file • Open [simulation_file] in IE3D • Open log file [log_file] • Display error from [error_file] • Open containing folder • Re-submit [simulation_file] • Delete job [simulation_file] • Clear [simulation_file] simulation output files • Display LSF parameters • Refresh • Resync by setting status to Pending
Command line	Displays the full path to the simulation file. Right-click a row to display the following options: • Open [simulation_file] as text file • Open [simulation_file] in IE3D • Open log file [log_file] • Display error from [error_file] • Open containing folder
State	Displays the simulation status.
Task ID	Provides distributed computing information.

Table 1-2. Distributed Service Browser Dialog Box Contents (cont.)

Option	Description
Spreadsheet	Displays information about the selected simulation. The first column title can be File (single simulation) or Freq (multiple simulations). Right-click a row to display the following options: • Open [simulation_file] as text file • Open [simulation_file] in IE3D • Open log file [log_file] • Display error from [error_file] • Open containing folder
Console	Displays information about activities in this dialog box.

Related Topics

"Distributed Computing" on page 7

Distributed Service Options Dialog Box - Advanced Tab

To access: From the Distributed Service Browser Dialog Box, select **Process > New simulation**

Use this tab to optionally specify a folder to store log files, which are normally written to the same folder as the simulation file (.SIM or .TXT). You may want to do this to consolidate the location of log files, when the simulation files are located in different folders.

Figure 1-3. Distributed Service Options Dialog Box - Advanced Tab

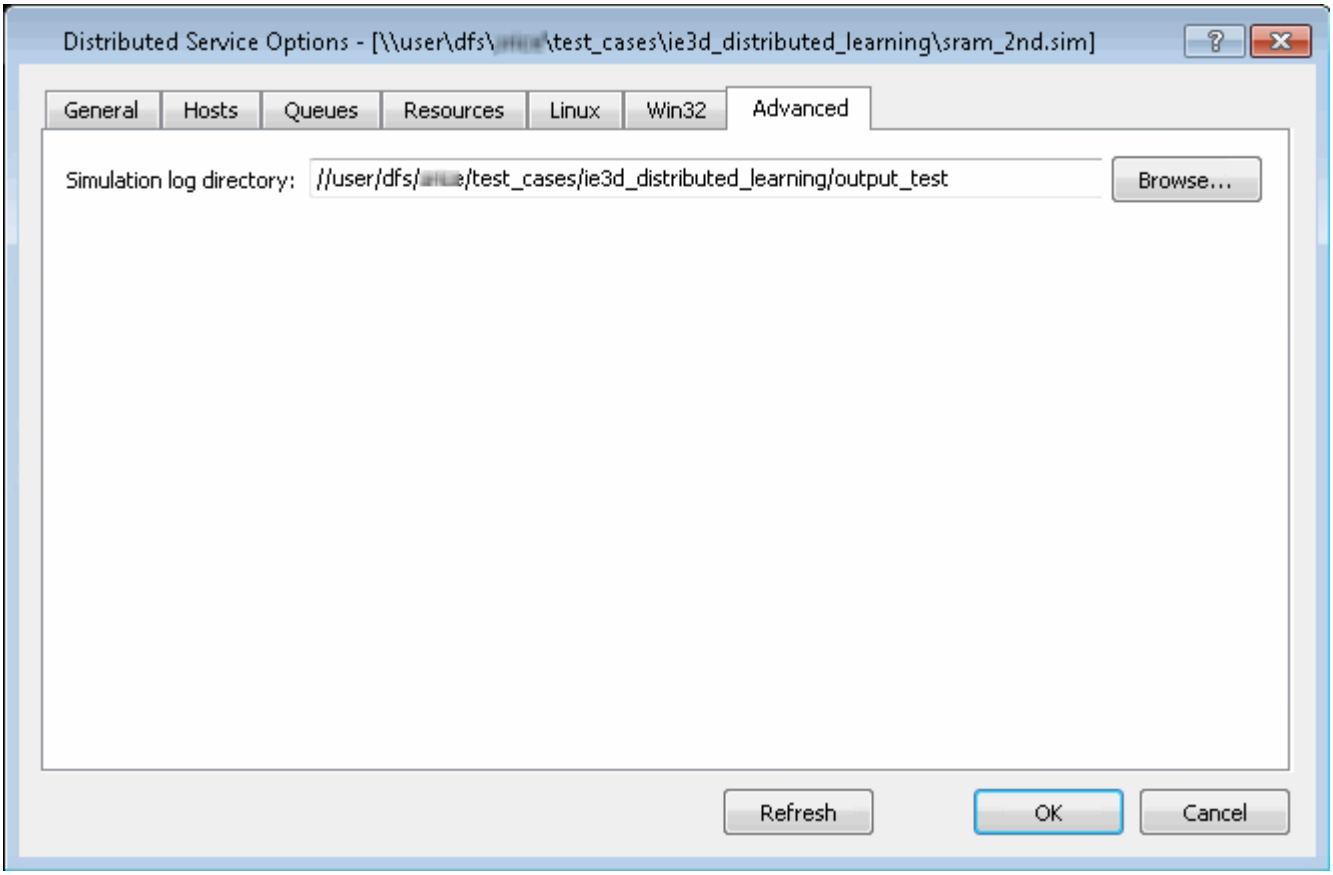


Table 1-3. Distributed Service Options Dialog Box - Advanced Tab Contents

Option	Description
Simulation log directory	Enter or browse to the folder that HyperLynx 3D EM should write log files to.

Related Topics

"Distributed Computing" on page 7

Distributed Service Options Dialog Box - General Tab

To access: From the Distributed Service Browser Dialog Box, select **Process > New simulation**

Use this tab to set up access between the HyperLynx 3D EM installation and the distributed computing software.

Figure 1-4. Distributed Service Options Dialog Box - General Tab

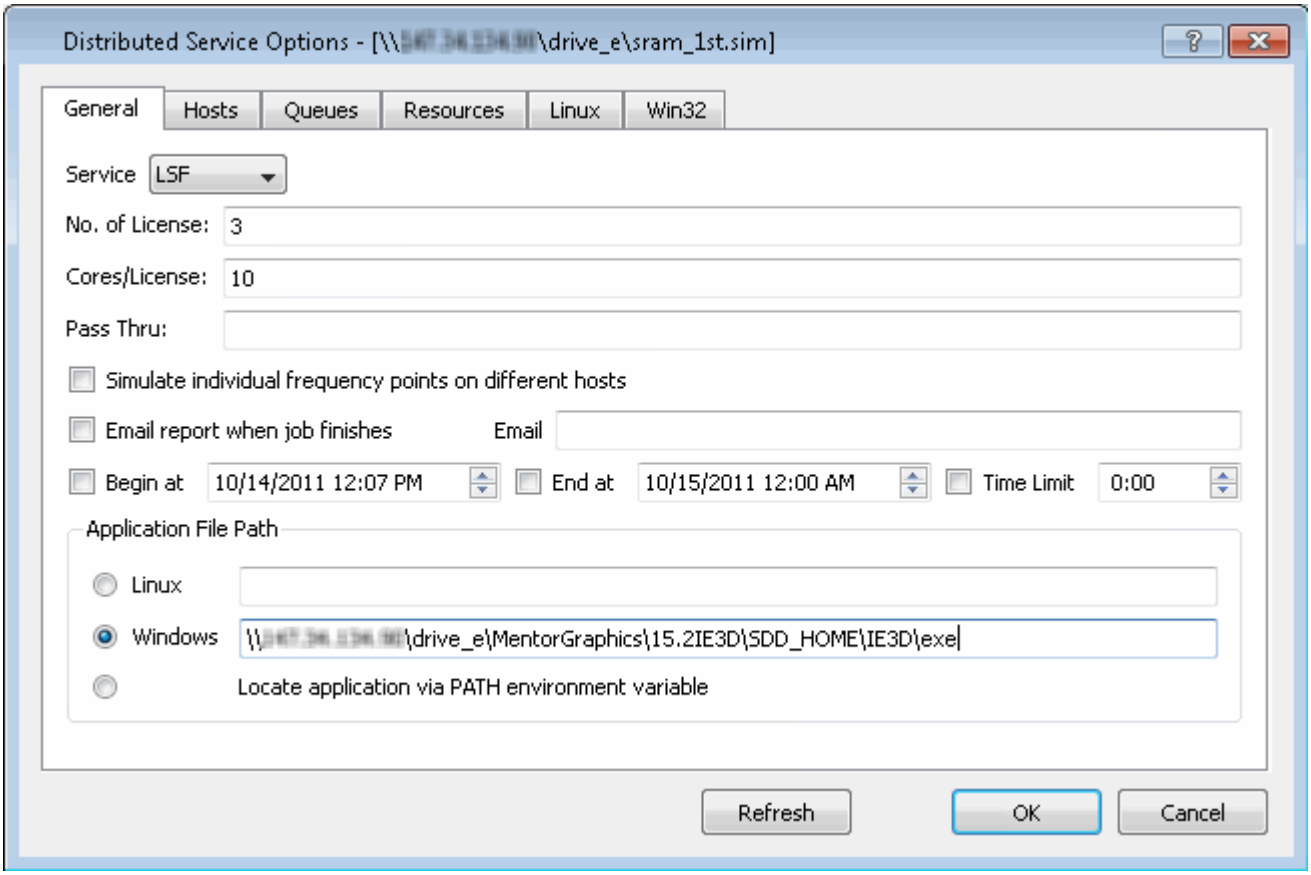


Table 1-4. Distributed Service Options Dialog Box - General Tab Contents

Option	Description
Service	Selects one of the following simulation service types: • **MultiSim**—Schedule multiple simulations on the local computer by automatically queuing them. Note that any computer can run MultiSim and it does not have to be a submit host or agent. • **LSF**—Send simulations to Platform LSF (load sharing facility) distributed computing software. • **Sun Grid**—Send simulations to Oracle Grid Engine (previously known as Sun Grid Engine or SGE) distributed computing software. Also select this option to use open source distributed computing software that supports exactly the same set of commands used by Oracle Grid Engine (Sun Grid). The dialog box reports when it cannot find the selected simulation service.
No. of License	Specifies the number of simulation jobs to run concurrently. HyperLynx 3D EM creates a simulation job for each frequency and simulation job consumes a ie3dcpucorelicense. For example, if you run distributed simulation and specify five licenses, then distributed computing can run five frequencies at a time.
Cores/License	Specifies the number of cores per CPU to enable with each license. This option counts logical CPU cores, if they exist. Some CPUs implement two logical cores for each physical core. For example, if the CPU has eight logical cores formed by four physical cores, then distributed computing software can consume eight cores per license. If the computer has two CPUs, each with four physical cores and eight logical cores, you may get better performance if you use two CPUs and four cores each instead of one CPU and eight cores.

Table 1-4. Distributed Service Options Dialog Box - General Tab Contents

Option	Description
Pass Thru	Specifies additional conditions when submitting the job. Use this field to specify advanced conditions not available from the GUI. For example, if you want to run a job only on agents with at least 8 GB of physical memory, there is no GUI option to enable that condition. However, you can look up the LSF or Oracle Grid Engine job submitting syntax to specify that condition and specify the additional options in this field.
Simulate individual frequency points on different hosts	Select to break up the overall simulation job into multiple smaller jobs, where each job simulates a specific frequency, and distribute the jobs to multiple agents. This option can reduce the overall run time for time consuming simulations with many frequency points. The No. of License option determines how many jobs can run concurrently. **Restriction:** This option is unavailable when you select MultiSim in the Service list.
Email report when job finishes	Select to send the job report to you by e-mail when the job finishes. **Restrictions:** • This option is unavailable when you select MultiSim in the Service list. • This option is supported by Platform LSF on both Windows and Linux computers.
Email	Specifies the e-mail address to receive the job report.
Begin at	Select to start the simulation at the specified time.
End at	Select to kill the simulation job(s) at the specified time.
Time limit	Select to kill the simulation job(s) at the specified elapsed time.
Application File Path Area—Indicate the folder containing HyperLynx 3D EM executable files, such as ie3dos.exe (Windows) and ie3dos (Linux). **Restriction: Options in this area are unavailable when you select MultiSim in the Service list.**	

Table 1-4. Distributed Service Options Dialog Box - General Tab Contents

Option	Description
Linux	Select to specify the HyperLynx 3D EM executable file folder location on a Linux computer. For example, /home/<user>/MentorGraphics/<release>/SDD_HOME/IE3D/exe
Windows	Select to specify the HyperLynx 3D EM executable file folder location on a Windows computer. For example, \\user\dfs\<user>\MentorGraphics\<release>\SDD_HOME\IE3D\exe
Locate application via PATH environment variable	Select to search the PATH environment variable contents to find the location of the HyperLynx 3D EM executable file. You manually set the PATH environment variable to specify the IED3 location as either: • Linux—/home/<user>/MentorGraphics/<release>/SDD_HOME/IE3D/exe • Windows—\\user\dfs\<user>\MentorGraphics\<release>\SDD_HOME\IE3D\exe

Related Topics

"Distributed Computing" on page 7

Distributed Service Options Dialog Box - Hosts Tab

To access: From the Distributed Service Browser Dialog Box, select **Process > New simulation**

Use this tab to optionally select the agents to run simulation on. The distributed computing administrator determines which computers act as agents.

Figure 1-5. Distributed Service Options Dialog Box - Hosts Tab

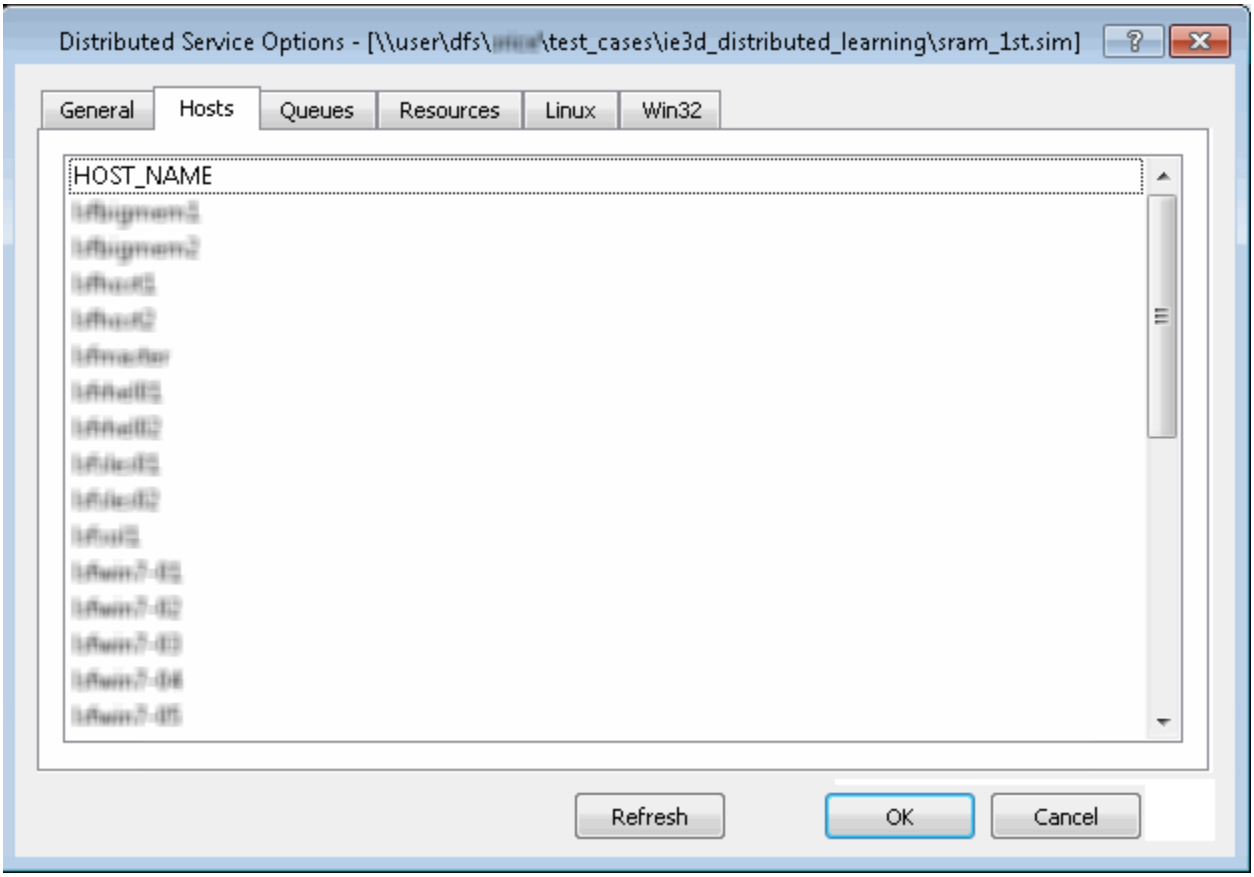


Table 1-5. Distributed Service Options Dialog Box - Hosts Tab Contents

Option	Description
<host_names>	Optionally, select one or more agents to run the simulation. Use standard object-selection methods for selecting multiple computers, such as drag, Ctrl+click, and Shift+click. **Restriction:** This tab is empty when you select MultiSim on the General tab.

Related Topics

"Distributed Computing" on page 7

Distributed Service Options Dialog Box - Linux Tab

To access: From the Distributed Service Browser Dialog Box, select **Process > New simulation**

Use this tab to specify commands to point to a Mentor Graphics license server, if your login environment does not already do it.

Figure 1-6. Distributed Service Options Dialog Box - Linux Tab

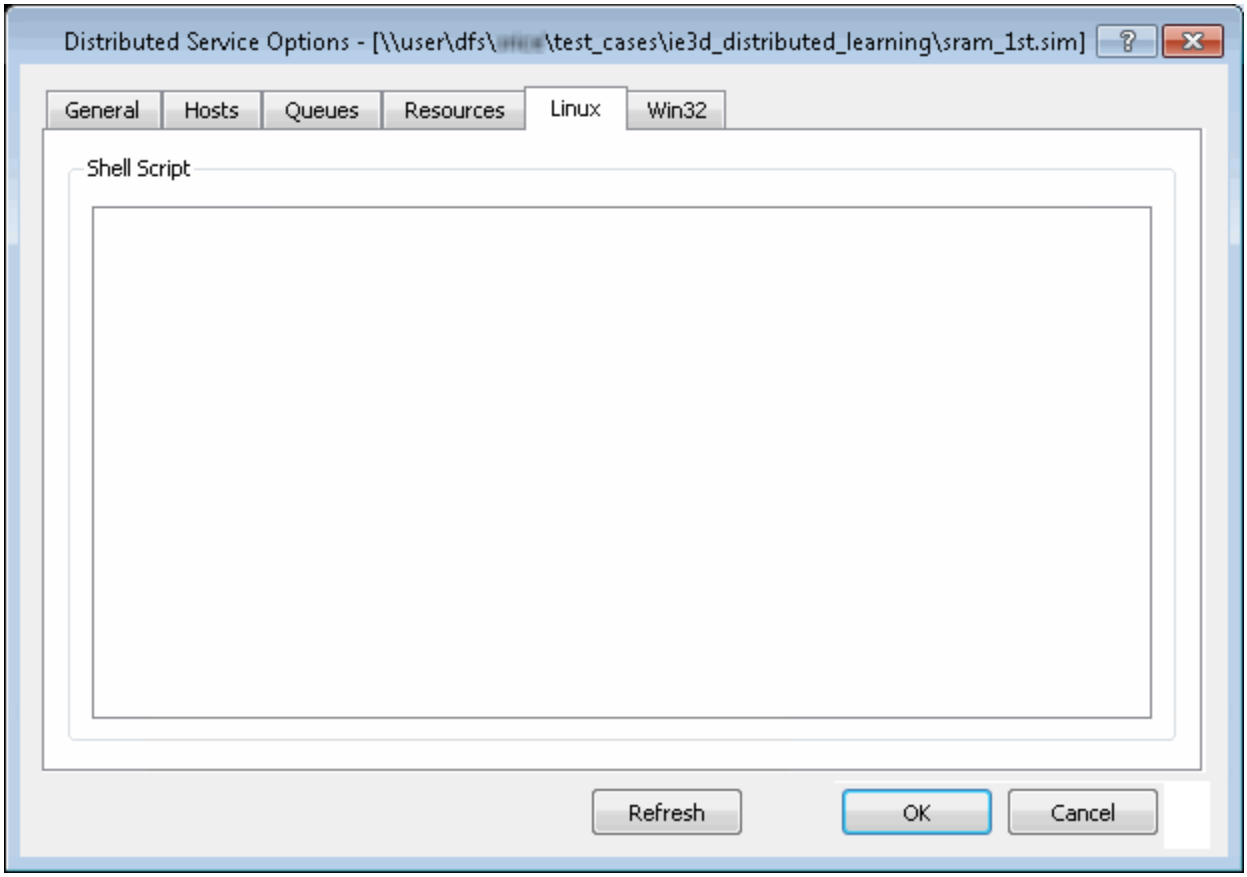


Table 1-6. Distributed Service Options Dialog Box - Linux Tab Contents

Option	Description
<commands>	Specifies commands to point to a Mentor Graphics license server, if your login environment does not already do it. Type either of the following sets of commands into the window: Platform LSF (Bash shell syntax): **MGLS_LICENSE_FILE=<port>@<host>** **export MGLS_LICENSE_FILE** Oracle Grid Engine (Sun Grid; c-shell syntax): **setenv MGLS_LICENSE_FILE <port>@<host>** If you specify multiple license servers, separate them with a colon : .

Related Topics

"Distributed Computing" on page 7

Distributed Service Options Dialog Box - Queues Tab

To access: From the Distributed Service Browser Dialog Box, select **Process > New simulation**

Use this tab to optionally select the simulation queues to use. The distributed computing administrator determines the set of queues.

Figure 1-7. Distributed Service Options Dialog Box - Queues Tab

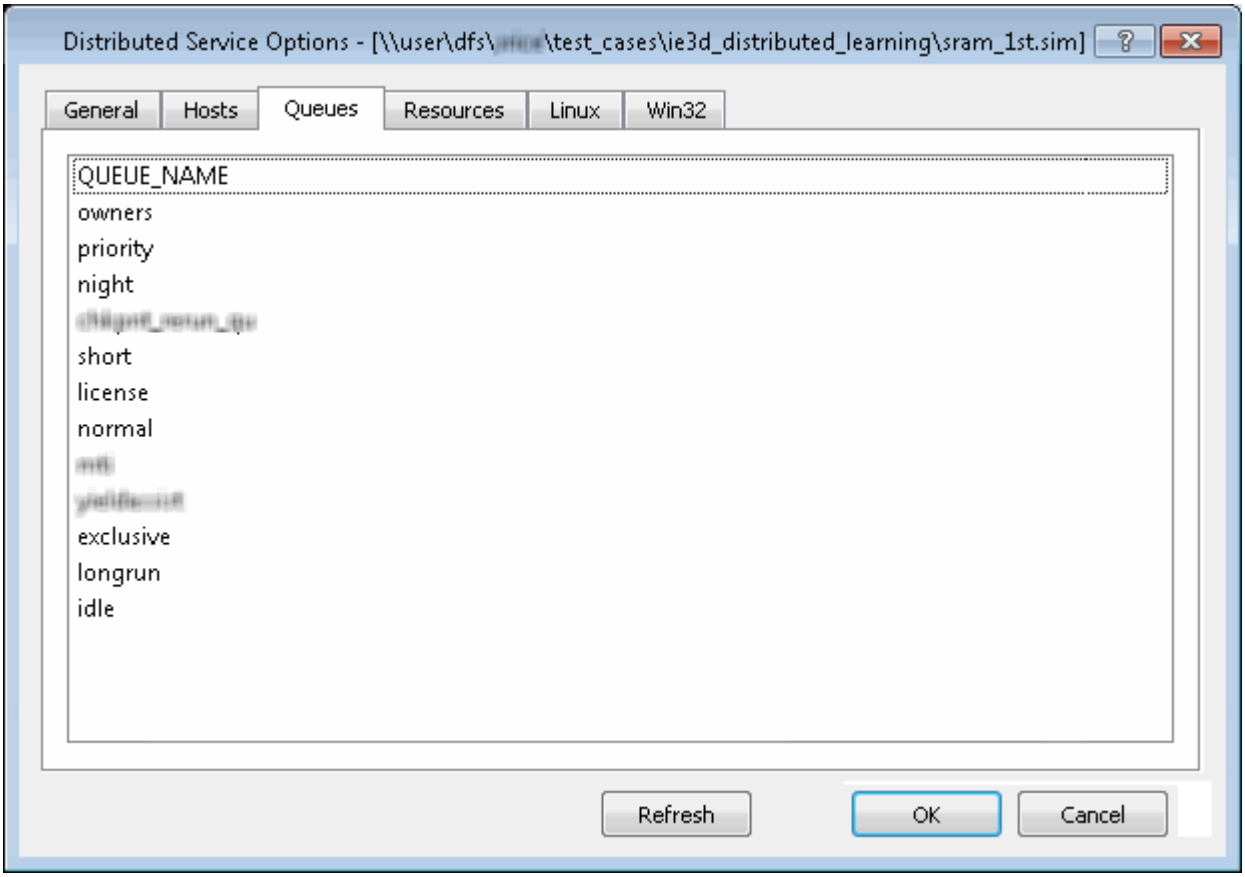


Table 1-7. Distributed Service Options Dialog Box - Queues Tab Contents

Option	Description
<queue_names>	Optionally, select one or more queues to run the simulation. Use standard object-selection methods for selecting multiple computers, such as drag, Ctrl+click, and Shift+click. **Restriction:** This tab is empty when you select MultiSim on the General tab.

Related Topics

"Distributed Computing" on page 7

Distributed Service Options Dialog Box - Resources Tab

To access: From the Distributed Service Browser Dialog Box, select **Process > New simulation**

Use this tab to display the resources monitored by the distributed simulation software. Advanced customers might use information displayed in this tab to specify additional job options with the Pass Thru option.

Figure 1-8. Distributed Service Options Dialog Box - Resources Tab

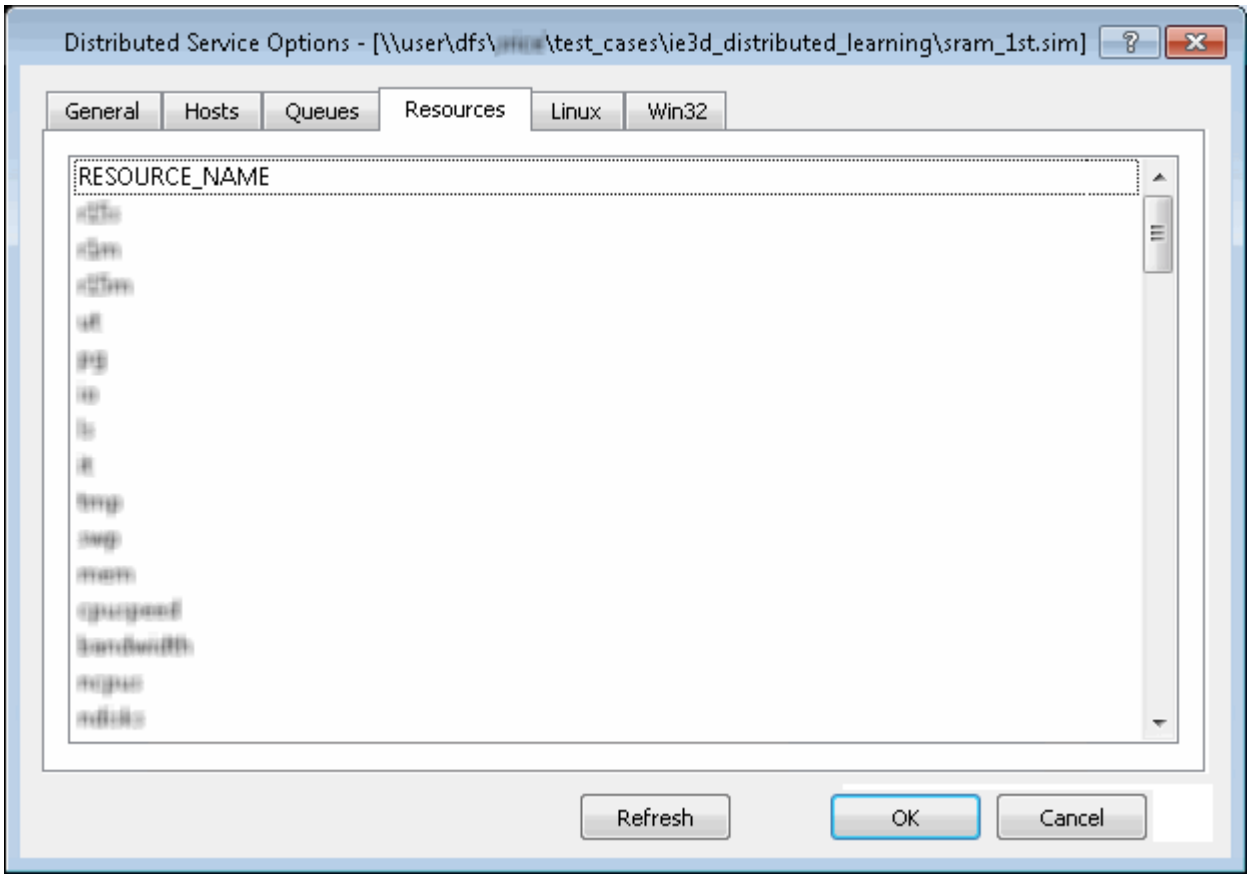


Table 1-8. Distributed Service Options Dialog Box - Resources Tab Contents

Option	Description
<resource_names>	Displays the resources monitored by the distributed simulation software. **Restriction:** This tab is empty when you select MultiSim on the General tab.

Related Topics

"Distributed Computing" on page 7

Distributed Service Options Dialog Box - Win32 Tab

To access: From the Distributed Service Browser Dialog Box, select **Process > New simulation**

Use this tab to specify commands to point to a Mentor Graphics license server, if your login environment does not already do it.

Figure 1-9. Distributed Service Options Dialog Box - Win32 Tab

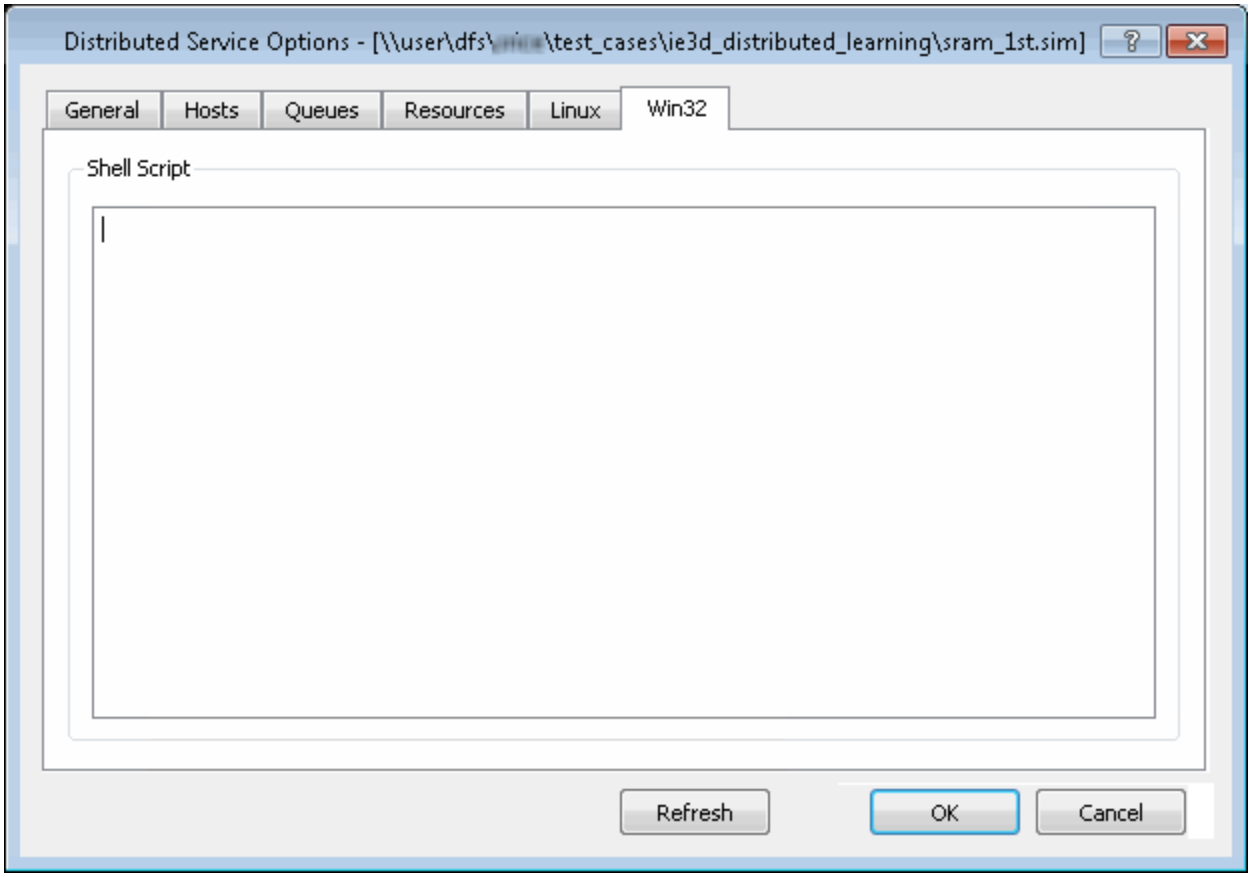


Table 1-9. Distributed Service Options Dialog Box - Win32 Tab Contents

Option	Description
<commands>	Specifies commands to point to a Mentor Graphics license server, if your login environment does not already do it. Type the following command into the window: **set MGLS_LICENSE_FILE <port>@<host>** If you specify multiple license servers, separate them with a semicolon ; .

Related Topics

"Distributed Computing" on page 7

Distributed Service Shared Directory Mapping Dialog Box

To access: From the Distributed Service Browser Dialog Box, select **File > Options**

Use this tab to specify existing mappings between local Windows folders, such as U:\ and D:\, and network locations. You might do this when you locate the HyperLynx 3D EM installation or simulation files in a shared folder on a local drive on a Windows computer. By contrast, you do not have to do this when you install HyperLynx 3D EM and located simulation files on the network.

Figure 1-10. Distributed Service Shared Directory Mapping Dialog Box

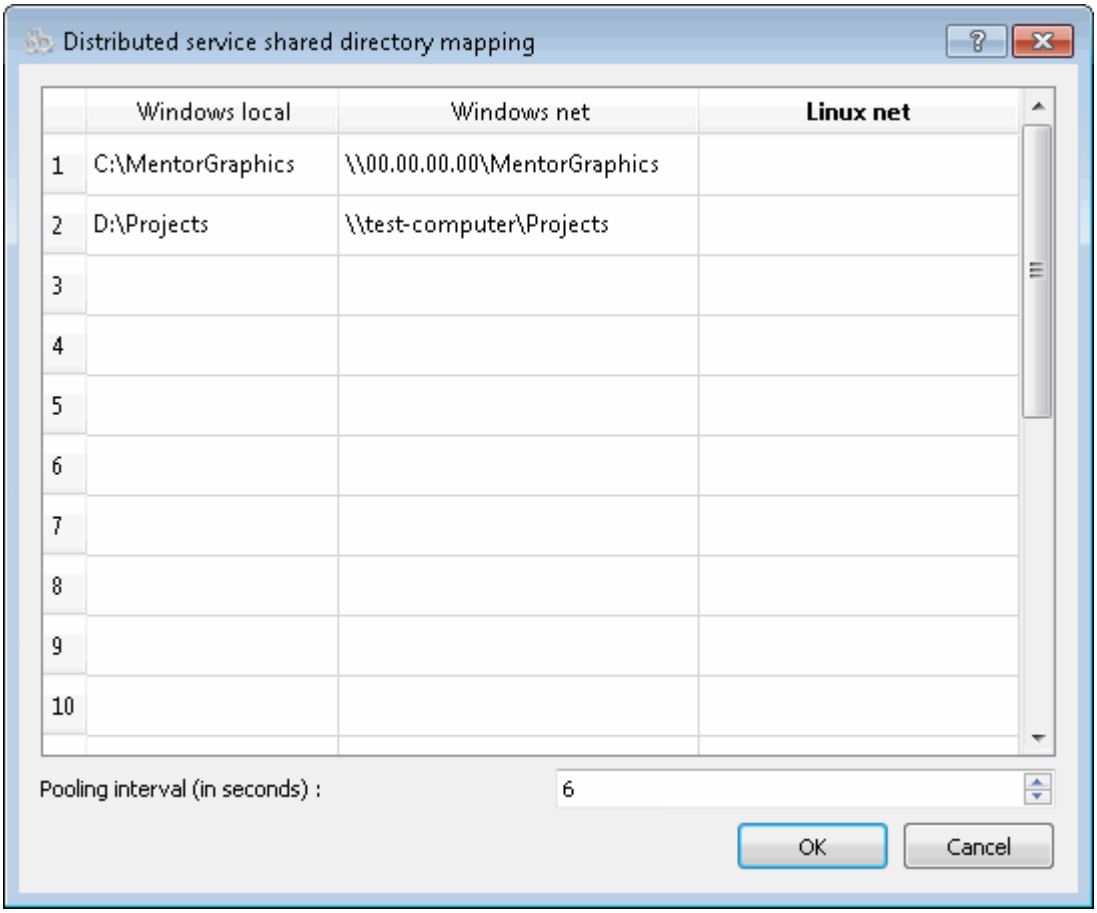


Table 1-10. Distributed Service Shared Directory Mapping Dialog Box Contents

Option	Description
Windows local	Specifies the name of the local drive and folder that contains the HyperLynx 3D EM installation or simulation data files. **Note:** If you use the IP address for the computer to specify the installation or data location, such as \\00.00.00.00\MentorGraphics for an installation location in the Distributed Service Options Dialog Box - General Tab, you do not have to specify here what to substitute C:\MentorGraphics with. To edit an existing value, double-click the cell.
Windows net	Specifies the shared name of the local drive specified in the Windows local column. For example, if you share C:\MentorGraphics as "MentorGraphics" on a computer named test-computer, the share name in this column is \\test-computer\MentorGraphics. See "Installing HyperLynx 3D EM in a Shared Location" on page 10, step 4. To edit an existing value, double-click the cell.
Linux net	Specifies the Windows net path in Linux syntax. For example, if the Windows path is \\projects\IE3D, the Linux path is /projects/IE3D. To edit an existing value, double-click the cell.
Polling interval (in seconds)	Specifies how often to check the state of running jobs and display their status in the Spreadsheet. For example, if you set the polling interval to 6 seconds, the job status is checked and reported every 6 seconds.

Related Topics

"Distributed Computing" on page 7

End-User License Agreement

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Rev. 100615, Part No. 246066