HyperLynx® 3D EM

Distributed Simulation Guide

Release 15.2

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Installing IE3D Distributed Service and Agent

1. ZDM and ZDS should be installed on different computers. In this document, installing steps are explained followed by the setup instructions.
2. Run setup.exe available in the install folder to get Mentor Graphics Install window as shown in Fig. 1. Click on '*Install Products*' button and enter the install path (default path: C:\ MentorGraphics\) in the next page. Click *'Next'*.

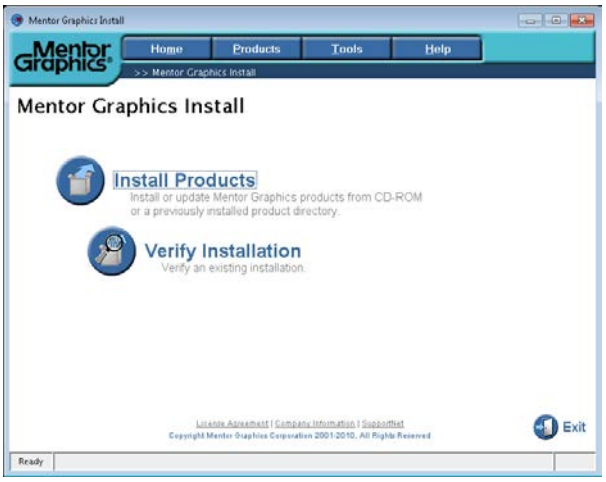

Figure 1 *Mentor Graphics Install* window

3. Select '*IE3D Distributed Computing Service'* option in the production selection page as shown in Figure 2.
4. Click '*Next'* button to *agree* to the terms and conditions and click '*Install*'.
5. After installing, click on '*Done*' button to finish the installation. Create a new environment variable "MGLS_LICENSE_FILE" in this computer. The value should be the server name that you got from Mentor Graphics along with IE3D software.
6. IE3D Agent installation and Client installation are same as above except step# 2. For ZDM 'IE3D Distributed Computing Agent' and "IE3D EM Designer" should be selected respectively in the product selection page.
7. The executables will be at the following location: C:\MentorGraphics\15.0IE3D\SDD_HOME\ IE3D\server\. Please note that this location will change if default path is changed to some other location in the step# 2.

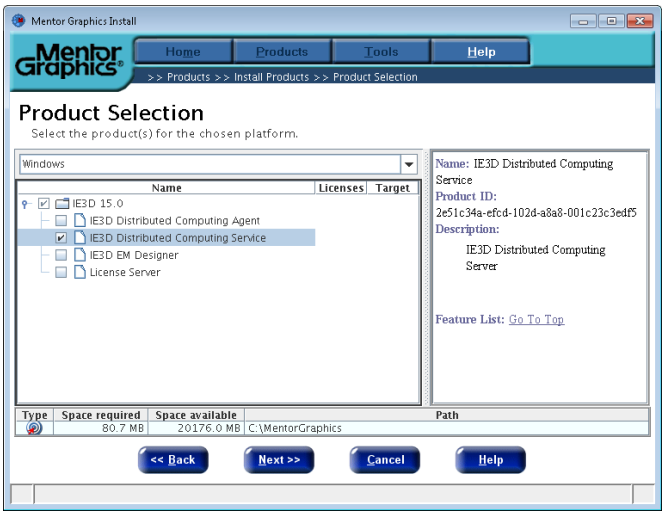

Figure 2 Product selection page

Distributed Service and Agent Setup

8. Double click on zds.exe, available in \Install_location\15.0IE3D\SDD_HOME\IE3D\server\ directory. 'Configure Distributed Agent Licenses' window comes up as shown in Fig. 3.

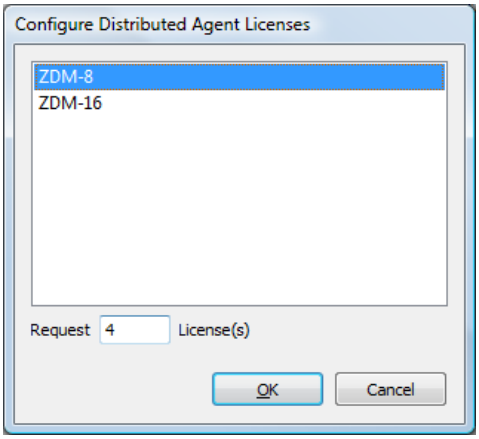

Figure 3 *Configure Distributed Agent Licenses* window

9. There will be two options to select, ZDM-8 and ZDM-16. With ZDM-8 option, Maximum allowed cores on any Agent will be 8. With ZDM-16 option, Maximum allowed cores on any Agent will be 16. Choose ZDM-8 unless you have Agents with 16 cores.
10. The number of licenses will limit the number of agents that will be used by this distributed service. In the Request Licenses box of Fig. 3, number 4 is entered. This means the ZDS instance that is about to open can handle a maximum of four agents.

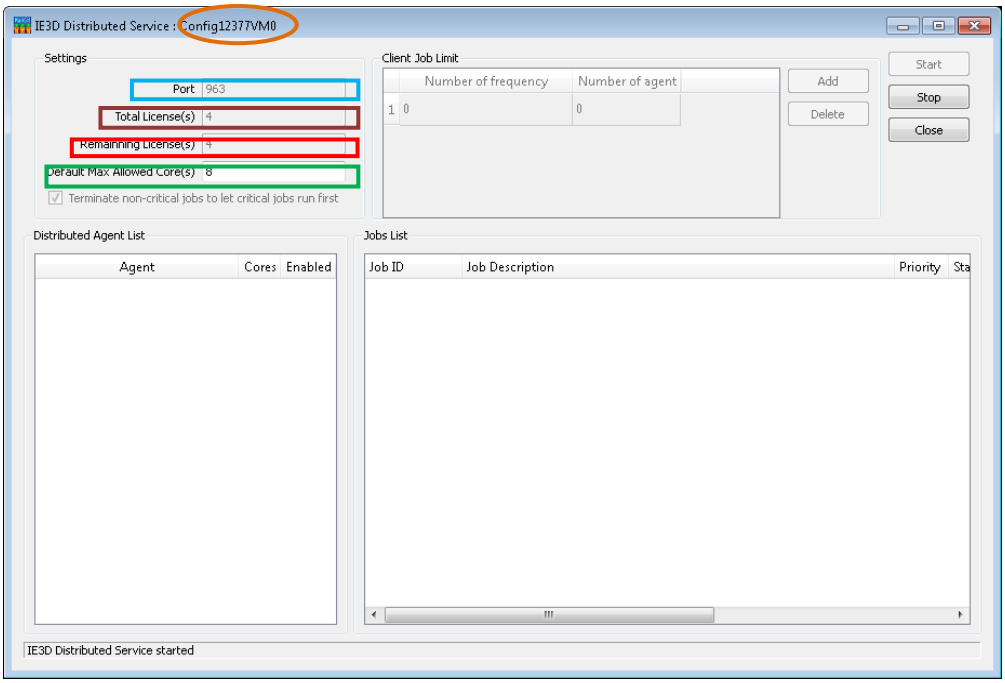

Figure 4 IE3D distributed Service

11. Enter the number of licenses required and Click 'OK'. "IE3D Distributed Service window" will show up as shown in Fig. 4.
12. The window title also shows the computer name (*Config12377VM0* in Fig. 4) on which the ZDS service is started. Please see the *Total licenses* are equal to the number of requested licenses in step# 11.
13. Default Max Allowed Cores are 8 because ZDM-8 is selected in step# 9 and/or Fig. 3.
14. In the computer where IE3D distributed agent is installed, go to the directory \Install_location\ 15.0IE3D\SDD_HOME\IE3D\agent\. Double click on zdm.exe to see '*Host Setting*' window as shown in Fig. 5

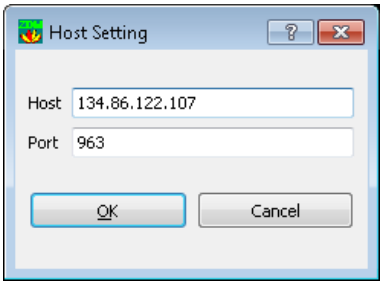

Figure 5 *Host Setting* window

15. In the *'Host'* field, enter the IP address of the computer where IE3D Distributed Service is started. In this example, 134.86.122.107 is the IP address of *Config12377VM0* computer. (from step# 12). Here in this field, computer name can also be entered instead of IP address.
16. In the '*port*' field, enter the number that is displayed in the '*port*' field of the IE3D Distributed Service window (Blue box in Figure 4). Click '*OK*' button to see ZDM window as shown in Fig. 6.

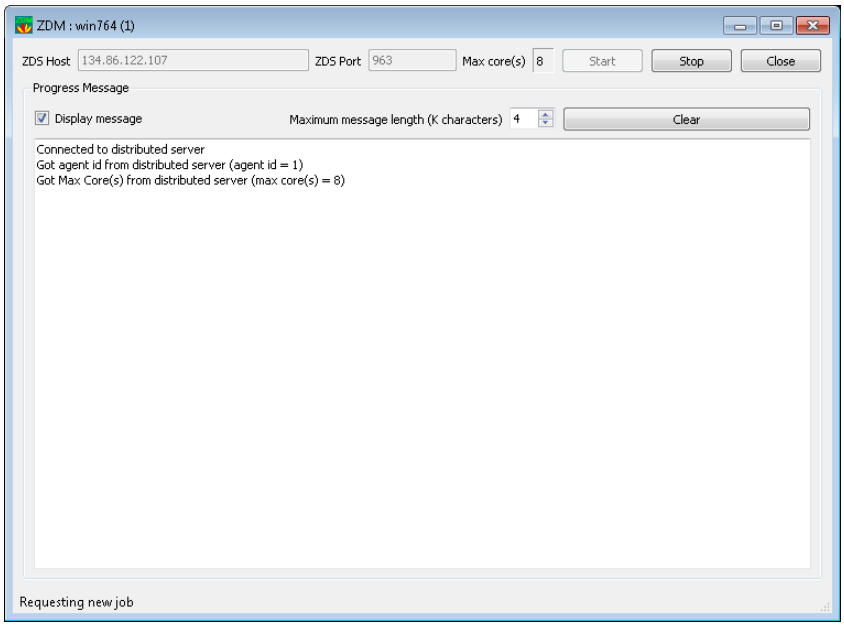

Figure 6 IE3D Distributed Agent

17. In Fig. 6, ZDS Host ID and port number are displayed as entered in step# 15-16. ZDM also displays the message that "Connected to Distributed Service" along with the Agent ID and number of Max cores obtained from the server.
18. If ZDM displays the message something like "Failed to connect to the Distributed Service", then it means Host ID or port number entered is wrong. In such case, Click "Stop" button to enter correct details in this window itself.
19. Now, please check the *IE3D Distributed Service* window. It should display the Agent name, ID and number of cores available in the "Distributed Agent List" section (See Figure 7).
20. See that the remaining licenses are three. It means up to three more agents can be connected ZDS. (Please Repeat steps 14 to 19 to add more agents). In Figure 7, two agents are listed.
21. Once Server and Agents are set up, Distributed simulations can be performed. Open a *.geo file with Mgrid on the client. In the simulation setup window, select "Invoke IE3D Network Distributed simulation" in the "*After Setup"* section and Click "OK". It will open *Jobsmanager* window, which is shown in Figure 8.

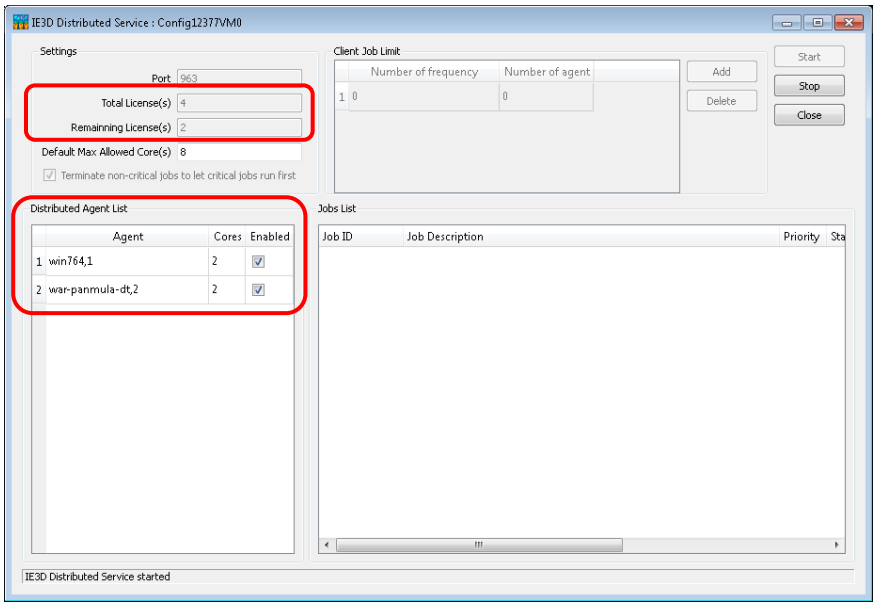

Figure 7 Agent Name, ID and Cores as shown in ZDS

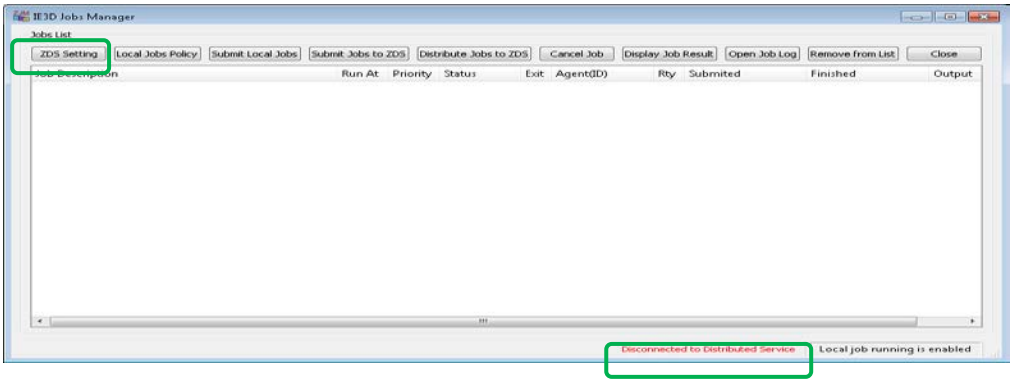

Figure 8 IE3D JobsManager

22. See that at the bottom of the window, “Disconnected to Distributed Service” message is displayed in red font. Click on “ZDS setting” button to see ‘*Host Setting*’ window, which is same as Figure 5. Enter the IP address and port number of the ZDS and Click “*OK*” [Note: computer name can also be entered in the Host field].
23. Now at the bottom, IE3D displays “Connected to Distributed Service” message as highlighted in Figure 9.
24. JobsManager also displays the status, agents with ID, and simulation time. To see the frequency points, click on the small triangle button present at the beginning of the line. (Figure 9)

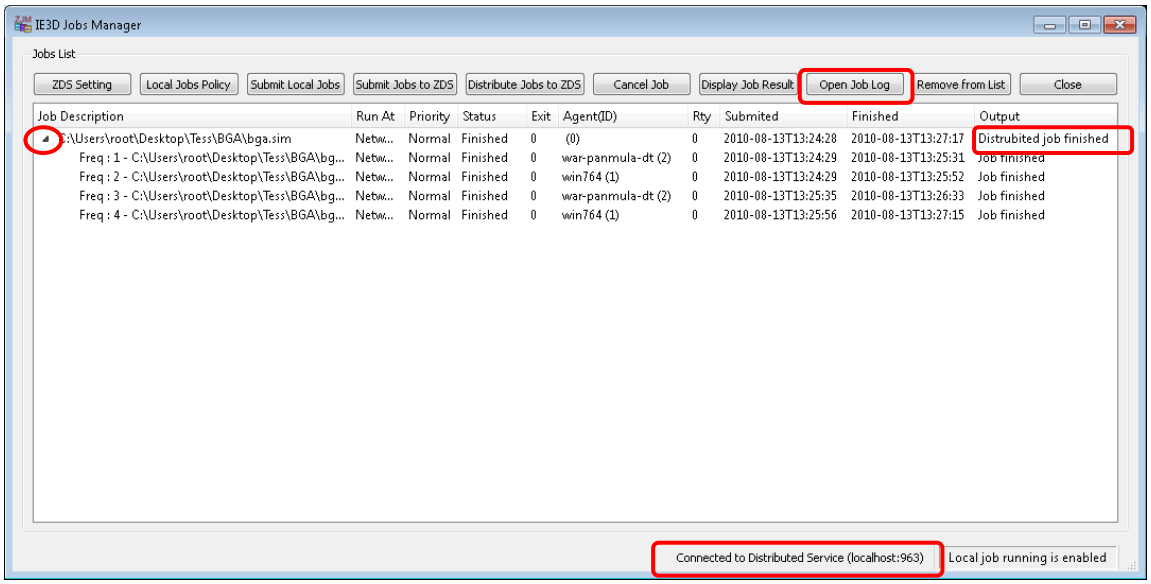

Figure 9 JobsManager features

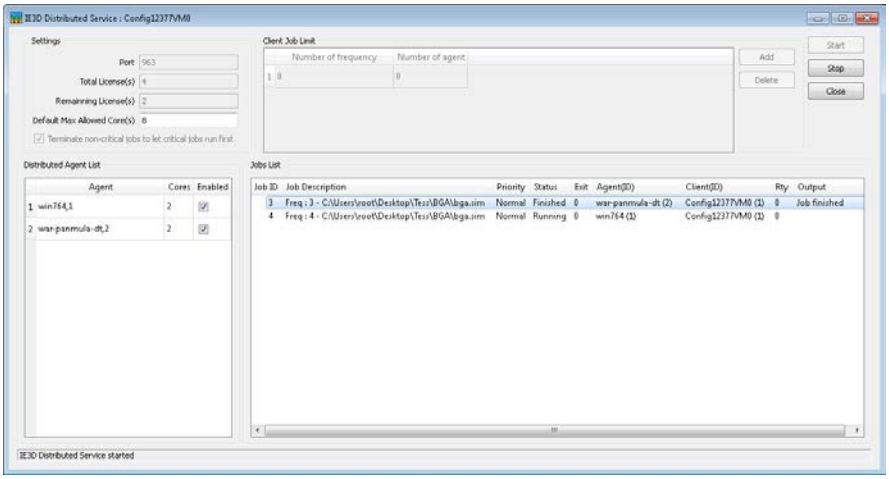

Figure 10 ZDS running the distributed simulation

25. Once the jobs are assigned, the details can be viewed in ZDS window as shown in Figure 10. It will display which frequency points are being simulated along with the agent ID and the status.
26. Once all frequency points are simulated, results are available in a directory named "*Output*" which is created at the *.sim file location.
27. Jobsmanager gives the output message as "*Distributed Job finished*". Now *log* file can be viewed by clicking "*Open Job Log*" button (Figure 9).