



# **How to Increase the Size of Your PD<sup>2</sup> Database\***

**January 18, 2000**

\* Because this topic is not covered by the current PMO funded SPS Helpdesk Agreement, this document has been provided to help you resolve this issue. If you still need assistance after reviewing this document, please contact a representative from your Customer Support Team.

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# 1. PROBLEM

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A user is working in PD<sup>2</sup> and they receive the following message.



*Figure 1: 1105 Error*

Error: "Can't allocate space for object '<object\_name>' in database '<database\_name>' because the '<system/default/logsegment>' segment is full. If you ran out of space in syslogs, dump the transaction log. Otherwise, use ALTER DATABASE or sp\_extendsegment to increase size of the segment."  
ErrCode: 1105"

The user needs to increase the size of their database.

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**Note:** This paper guides you through the process of verifying and resolving Error 1105. Each section presents detailed instructions in Sybase Central and SQL Advantage. You may choose the method that you are most comfortable with, but you **DO NOT NEED TO USE BOTH**.

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## 2. VERIFICATION

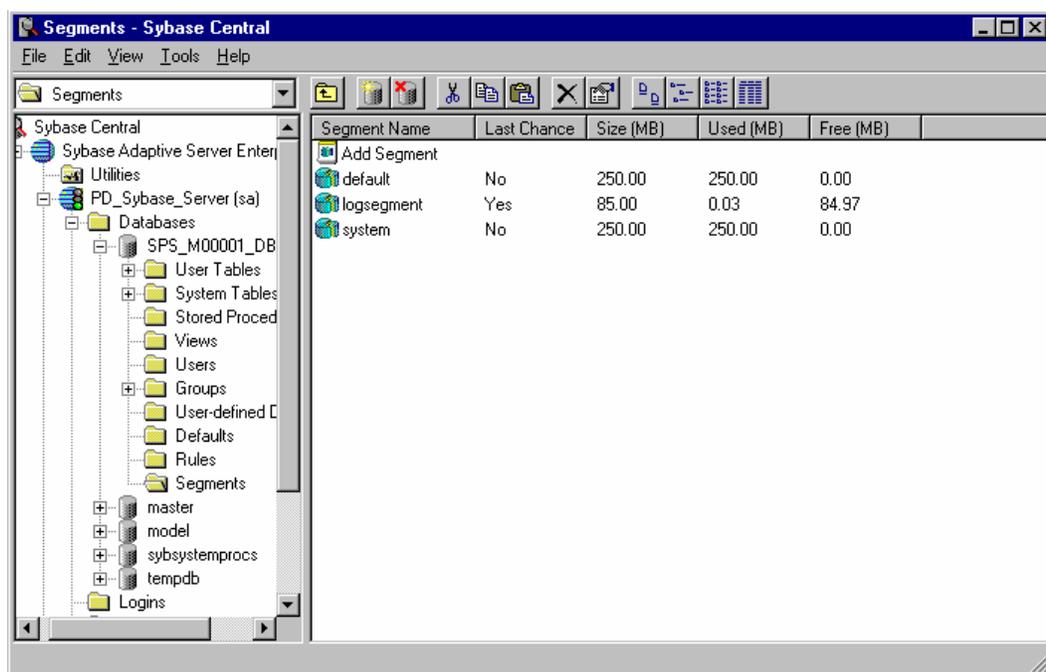
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### 2.1 Using Sybase Central

**Note:** If you do not have access to Sybase Central you may follow the steps under Section 2.2 Using WISQL or SQL Advantage.

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Connect to the server as 'sa' using Sybase Central. After logging in, double click on the folder named "Databases". Locate the database that is listed in the error message and double-click on it. When the list of folders appears select the "segments" folder (See Figure 2). The segments folder lists the three segments that make up the database. Those segments are default, logsegment and system segment. The logsegment is used to store transaction log information. If your database is set to "truncate log on checkpoint" then this segment should not fill up under normal circumstances. The default and system segments are used to store data. In most cases, these are the segments that are full. In this window, they report the exact same information (See Figure 2).



**Figure 2: Segments Folder**

Refer back to the error message and verify which segment is full. If the error mentioned the default or system segment then there would be a 0.00 (or close to 0.00) in the column under Free (MB).

**Note:** If your logsegment is full please follow the instructions in the paper entitled "Troubleshooting Transaction Log Errors".

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If you select the Usage tab in the Properties window, then the results displayed next to “Total Free” reflect total free space for data **and** transaction log combined.

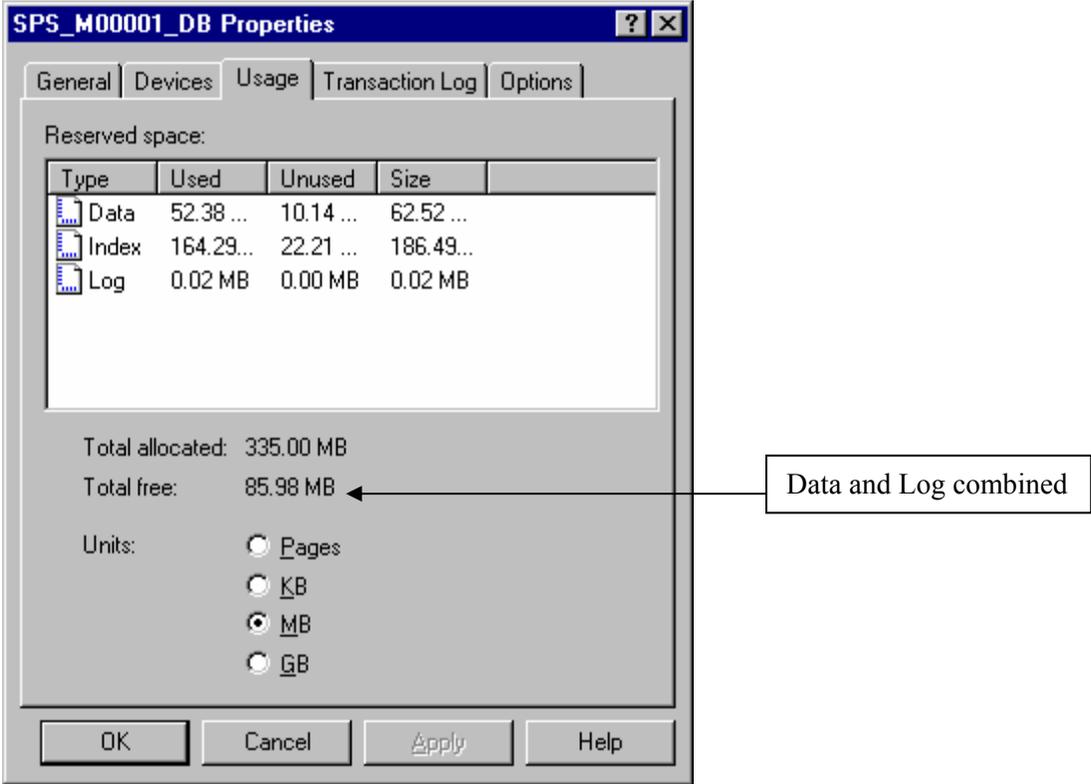


Figure 3: Usage Tab under the Properties Menu

**Note:** It is recommended that you refer to the segments folder to get an accurate total of available free space.

## 2.2 Using WISQL or SQL Advantage

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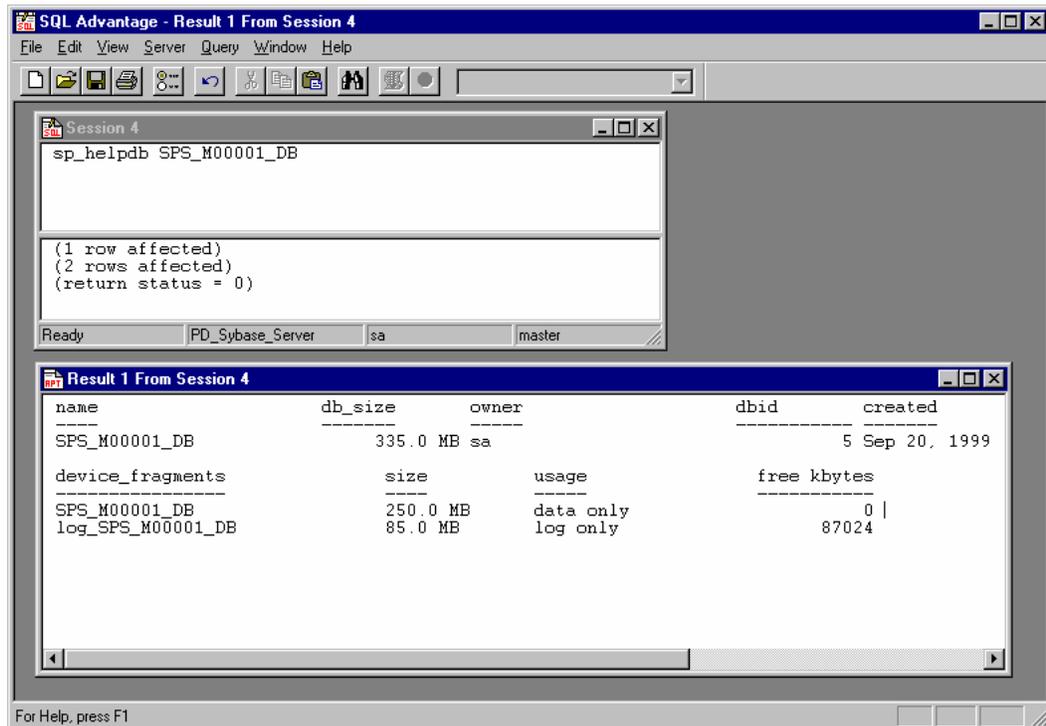
**Note:** If you do not have access to WISQL or SQL Advantage you may follow the steps under Section 2.1 Using Sybase Central.

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In WISQL or SQL Advantage execute the following command.

```
sp_helpdb <dbname>
```

<dbname> = the name of the database that is full.



*Figure 4: Results from "sp\_helpdb"*

When the results come back note the information under column entitled "free kbytes". This number will be 0 (or close to 0) if your database or log (depending on the segment) is full.

## 3. SOLUTION

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Increasing the size of your PD<sup>2</sup> database is a two-part process. Part I walks you through creating the database device. Part II walks you through attaching the device to the database. You must complete **BOTH** parts to increase the size of the database.

### 3.1 PART I: Creating a Database Device

#### 3.1.1 Using Sybase Central

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**Note:** If you do not have access to Sybase Central you may follow the steps under Section 3.1.2 Using WISQL or SQL Advantage.

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Connect to the server as ‘sa’ using Sybase Central. After logging in, double click on the folder named “Database Devices”.

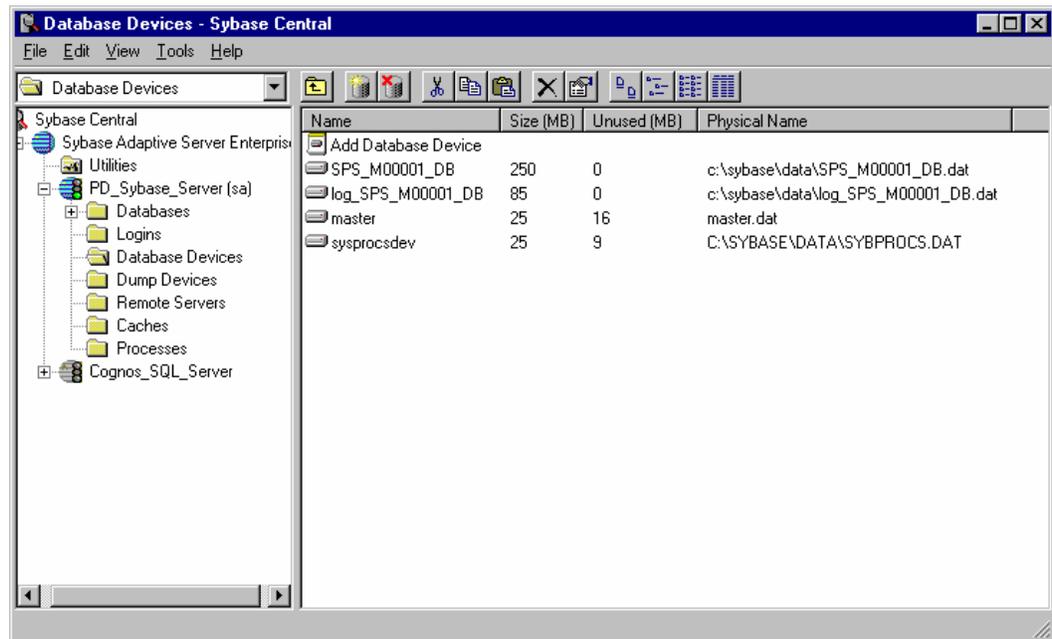


Figure 5: Database Devices Folder

When the Database Devices window opens note the “Name” and “Physical Name” of your most recent database device. The new database device will have the same name as your most recent device plus a descriptive extension, such as “\_ADD1” or “\_DEV1”. The physical location is important to note because it is important to try to keep all the database devices together in the same directory. **Before creating this device, make sure this directory has enough space for the device that you are about to create.** If there is not enough space available then it is OK to create the device in another location that has space available. Once you have noted the name and location of the most recent device **and** verified that there is space available in this location then click on the “Add Database Device” icon.

The first window prompts you for the name and location of the new device (See Figure 6). For example, if this is the first database device that you have created then be sure to use the extension “\_ADD1” in both the name and physical location. For the physical location be sure to add the .dat file extension to the end of the file name. If you are using a Unix server, make sure you use the proper naming convention for this file.

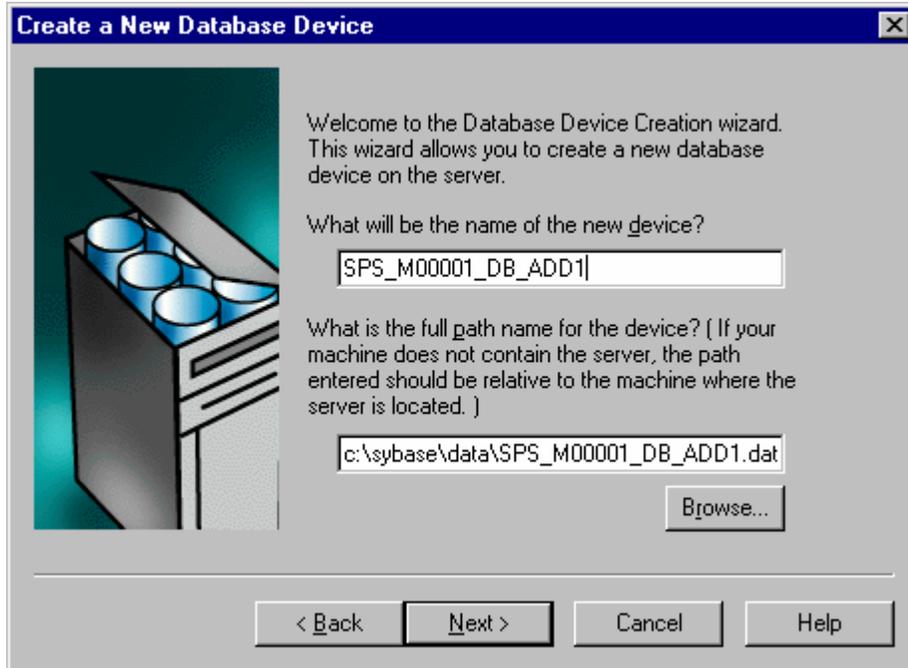


Figure 6: Add Device Window 1 - Name & Location

The next window prompts you for your device number, size and starting address.

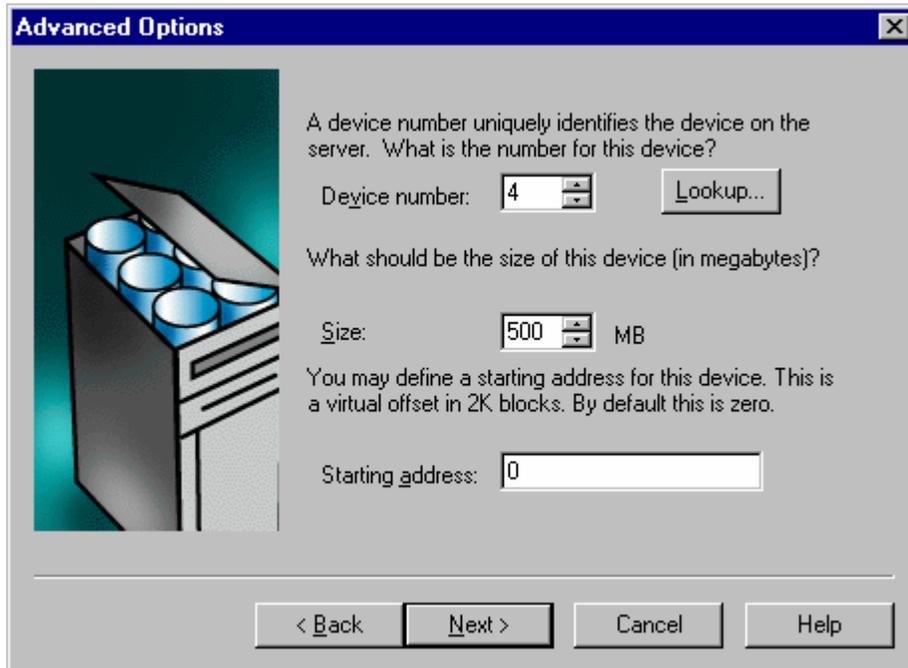


Figure 7: Add Device Window 2 - Number, Size & Address

The Device Number defaults to the next available device number. Do not change this field. The Size is the size in MB that you want to increase your database. For a PD<sup>2</sup> database we recommend a minimum of 500MB per increase. The Starting Address is always 0. Do not change this field.

The next window prompts you for mirroring information. In standard installations database devices are not mirrored.

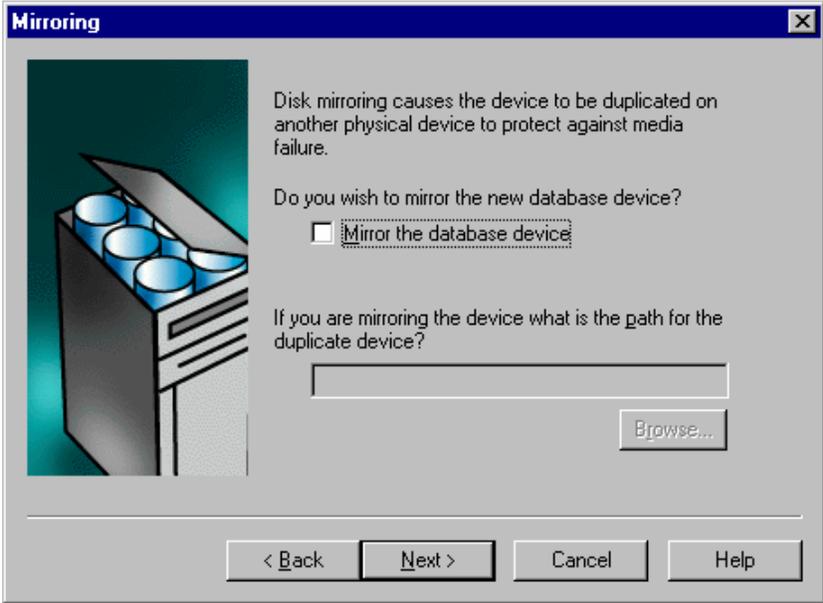


Figure 8: Add Device Window 3 - Mirroring

Make sure that “Mirror the database device” is not checked.

The last window is your summary window.

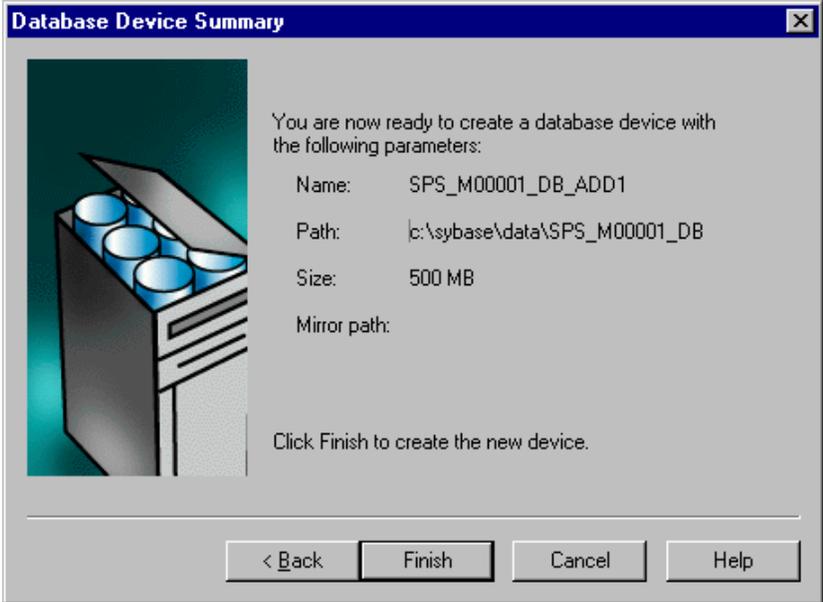


Figure 9: Add Device Window 4 - Summary

Verify that all the information is correct. If you cannot see the entire Path, place your cursor in that field and use the right arrow button to scroll to the right. If everything is correct then click on the finish button.

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**Note:** Your screen will disappear and turn into a white box while the system is creating the database device. Be patient. Do not exit out of Sybase Central.

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When the Sybase Central window reappears you will see the new database device.

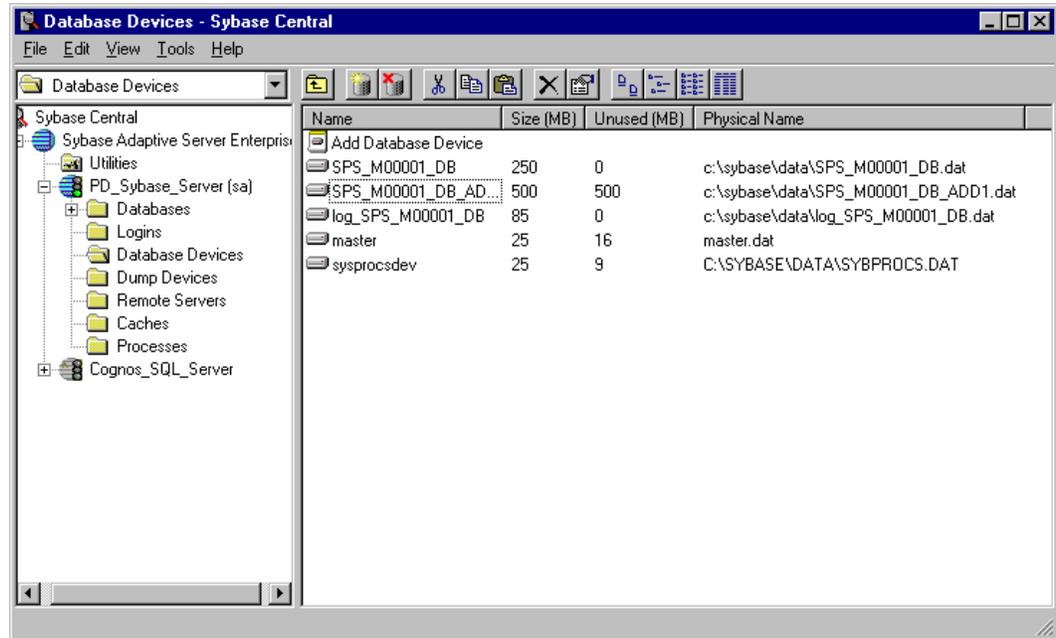


Figure 10: Database Devices Folder

### 3.1.2 Using WISQL or SQL Advantage

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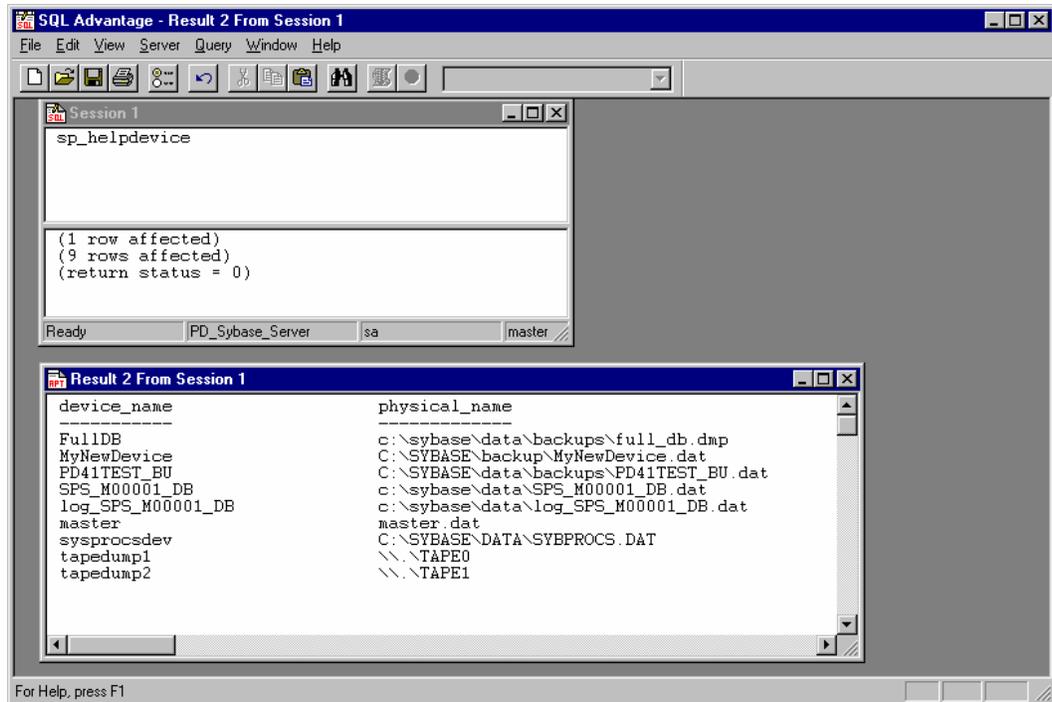
**Note:** If you do not have access to WISQL or SQL Advantage you may follow the steps under Section 3.1.1 Using Sybase Central.

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Log into WISQL or SQL Advantage using you 'sa' id and password. Make sure that you are connected to the master database. Run the following SQL statement in the master database to determine the name and physical location of your most recent database device.

```
sp_helpdevice
```

The results should look as follows.



**Figure 11: Results from "sp\_helpdevice"**

Once the results appear, note the "device\_name" and "physical\_name" of your most recent database device. These should be the same names that were listed in the results of the sp\_helpdb <dbname> command (See Figure 4). The new database device will have the same name as your most recent device plus a descriptive extension, such as "\_ADD1" or "\_DEV1". The physical location is important to note because it is important to try to keep all the database devices together in the same directory. **Before creating this device, make sure this directory has enough space for the device that you are about to create.** If there is not enough space available then it is OK to create the device in another location that has space available.

In the same result window, you will also need to note the next available device number. Scroll over to the field labeled "device\_number" and determine the next available number. In this example the next available number is 4 (See Figure 12).

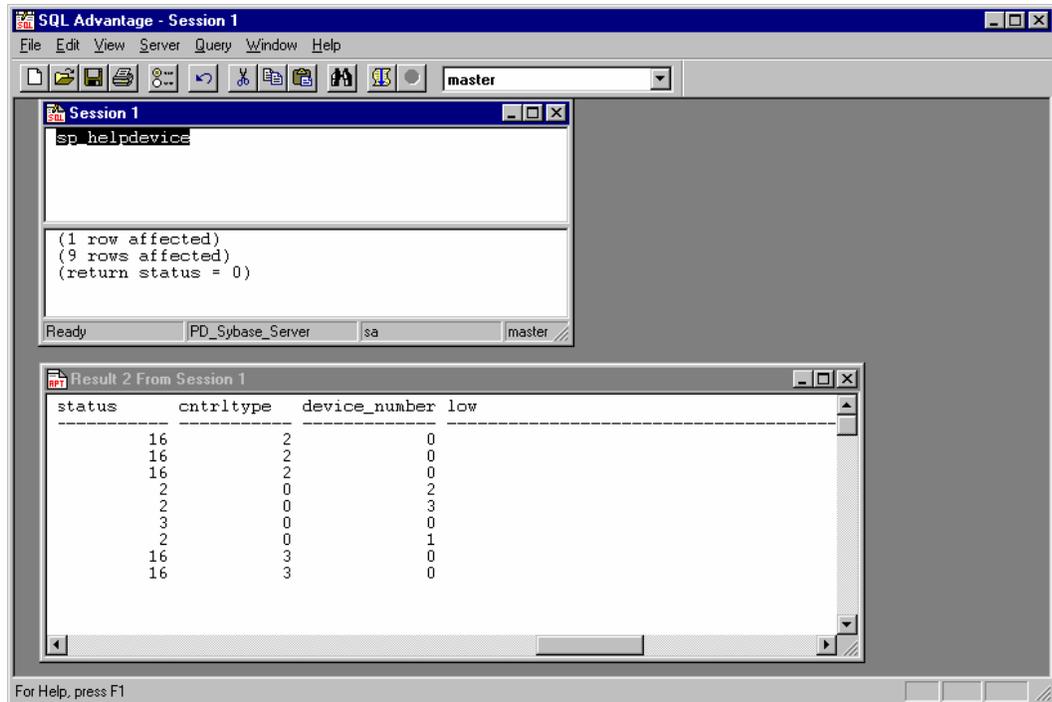


Figure 12: Results from "sp\_helpdevice"

Once you have obtained all the necessary information, you can create a database device by running the following SQL Command.

```
disk init name="<device_name>",
physname="<physical_name>",
vdevno=<virtual_device_number>,
size=<size_in_blocks>, vstart=0
```

<device\_name> = the name for the database device that you are going to create.

<physical\_name> = the physical file name and location of where the device will be located (e.g. c:\sybase\devicename.dat). If you are using a Unix server, make sure you use the proper naming convention for this file.

<vdevno> = the virtual device number. As described above, you can use sp\_helpdevice to see which virtual device numbers are currently being used.

<size\_in\_blocks> = the size in 2K blocks of the device (512 blocks = 1 MB).

<vstart >= the starting address of the device. This is zero.

Example

```
disk init name="SPS_M00001_DB_ADD1",
physname="c:\sybase\data\SPS_M00001_DB_ADD1.dat",
vdevno=4,
size=25600, vstart=0
```

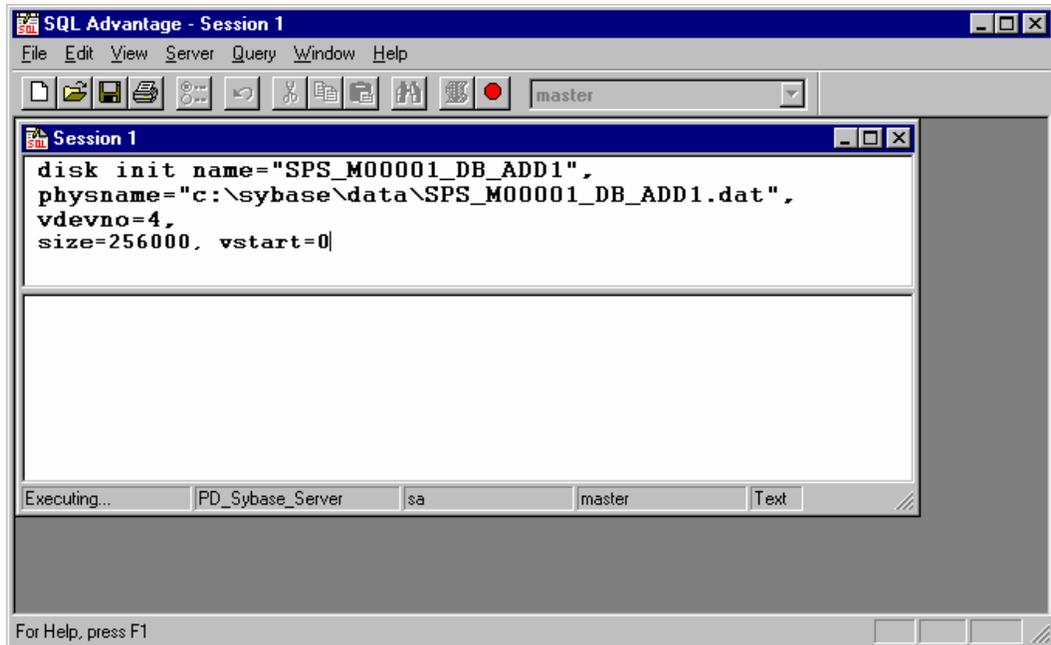


Figure 13: Example of "disk init" command

Execute the entire statement. When it is finished the microhelp in the lower left-hand corner will change from "Executing" to "Ready".

If you are using WISQL or WISQL32 the following message may appear.



Figure 14: Time Out Message

Click the OK button. This message will appear every 60 seconds while the device is being created. **DO NOT ABORT QUERY.**

When finished run the sp\_helpdevice command once again to verify that the device has been created (See Figure 15).

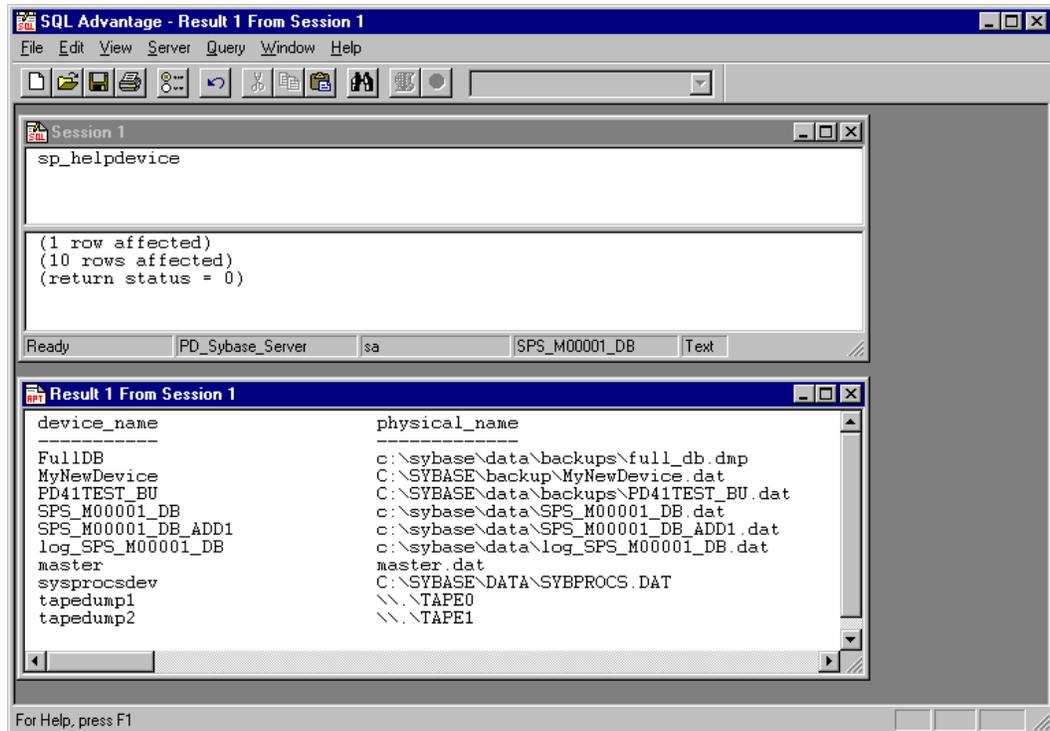


Figure 15: Results from "sp\_helpdevice"

## 3.2 PART II: Attaching the Device to the Database

### 3.2.1 Using Sybase Central

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**Note:** If you do not have access to Sybase Central you may follow the steps under Section 3.2.2 Using WISQL or SQL Advantage.

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After creating the database device you need to attach it to the database that needs to be increased. Log into Sybase Central and double click on the folder named "Databases". Right click on your database and select "Properties" from the drop down menu. When the properties window appears go to the "Devices" tab (See Figure 16).

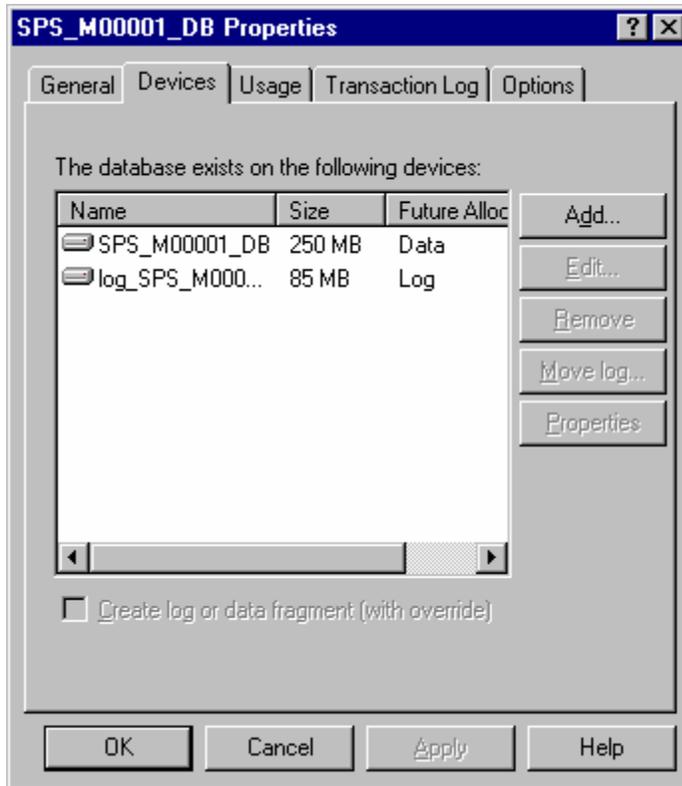


Figure 16: Devices Tab under the Properties Menu

The devices listed are the current devices that combine to create your database. From this window you can attach an additional database device. Select the “Add” button.

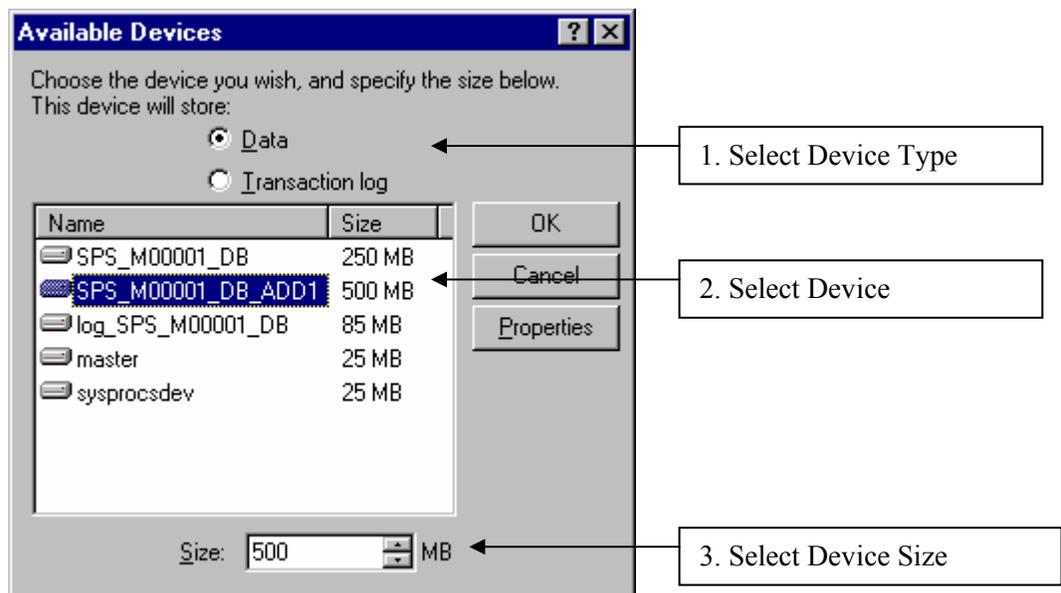


Figure 17: Add Device Window

There are three steps to attaching the device to a database

1. Select the device type.
2. Select the device.
3. Enter the size.

Once this is complete click on the OK button. The device will appear on the list of devices.

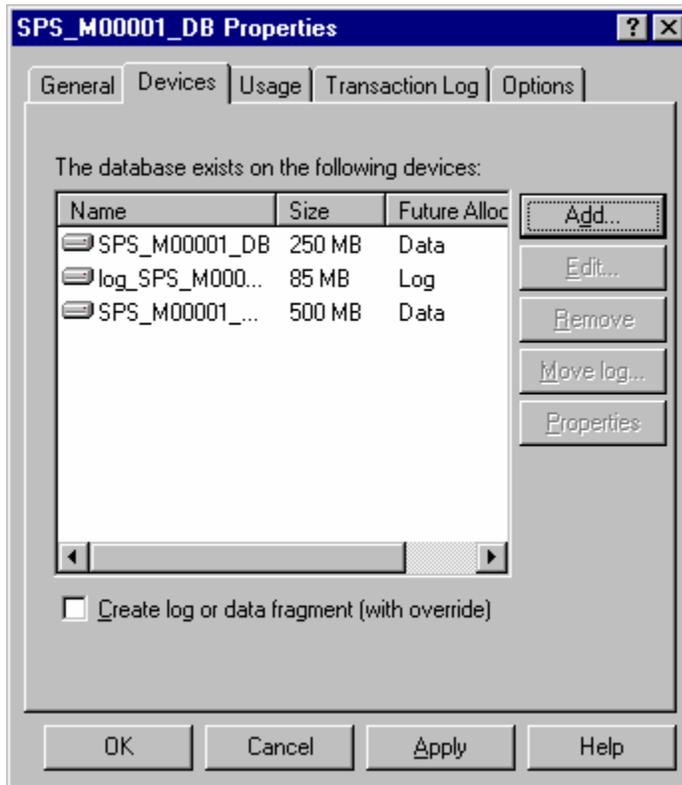


Figure 18: Devices Tab under the Properties Menu

Select the OK button to complete this process.

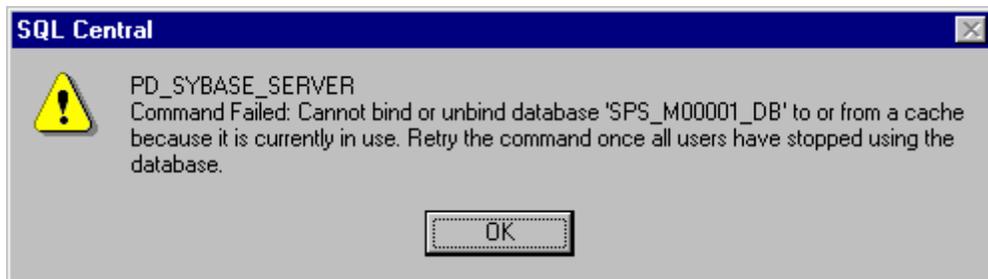


Figure 19: Bind/Unbind Error

If the preceding error appears, please verify that everyone is out of PD<sup>2</sup> and try again. If the error appears again you can try rebooting the server to clear out any phantom processes. If the error still appears after verifying that no one is in PD<sup>2</sup> and after rebooting the server then use WISQL or SQL Advantage to attach the new device to the database. See section 3.2.2 Using WISQL or SQL Advantage for these instructions.

Once the device has been added to the database, verify that the database size has increased by using the method listed under the Verification section 2.

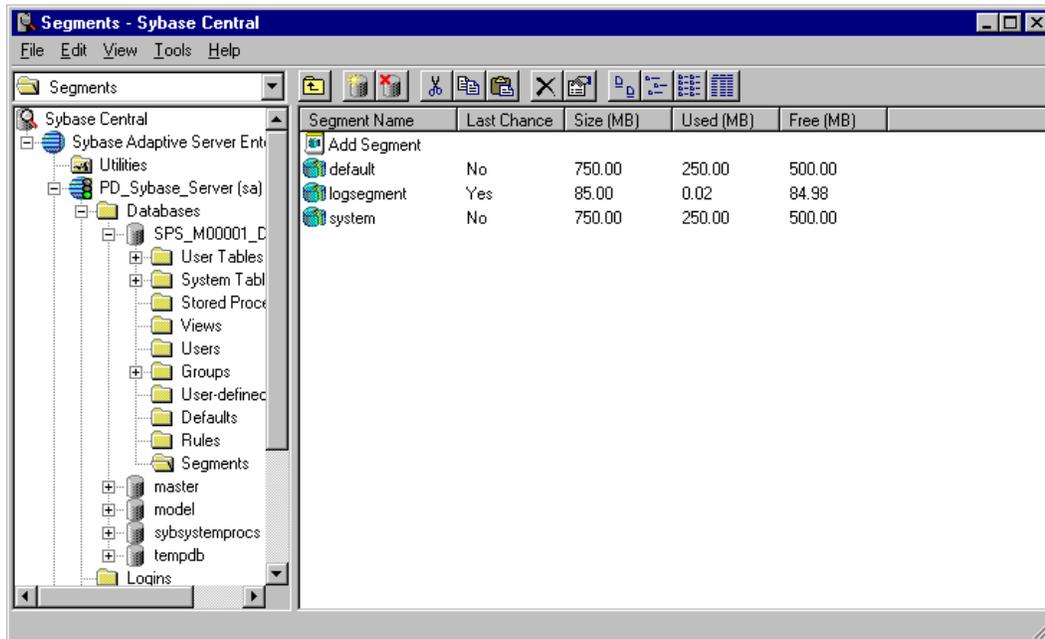


Figure 20: Segments Folder

### 3.2.2 Using WISQL or SQL Advantage

**Note:** If you do not have access to WISQL or SQL Advantage you may follow the steps under Section 3.2.1 Using Sybase Central.

After creating the database device you need to attach it to the database that needs to be increased. This can be done by running the following command in SQL Advantage.

```
alter database <dbname> on <devname> = <size>
```

<dbname> = the name of the database.

<devname> = the name of the new device that you created.

<size> = the size of the device in MB.

Example

```
alter database SPS_M00001_DB
on SPS_M00001_DB_ADD1 = 500
go
```

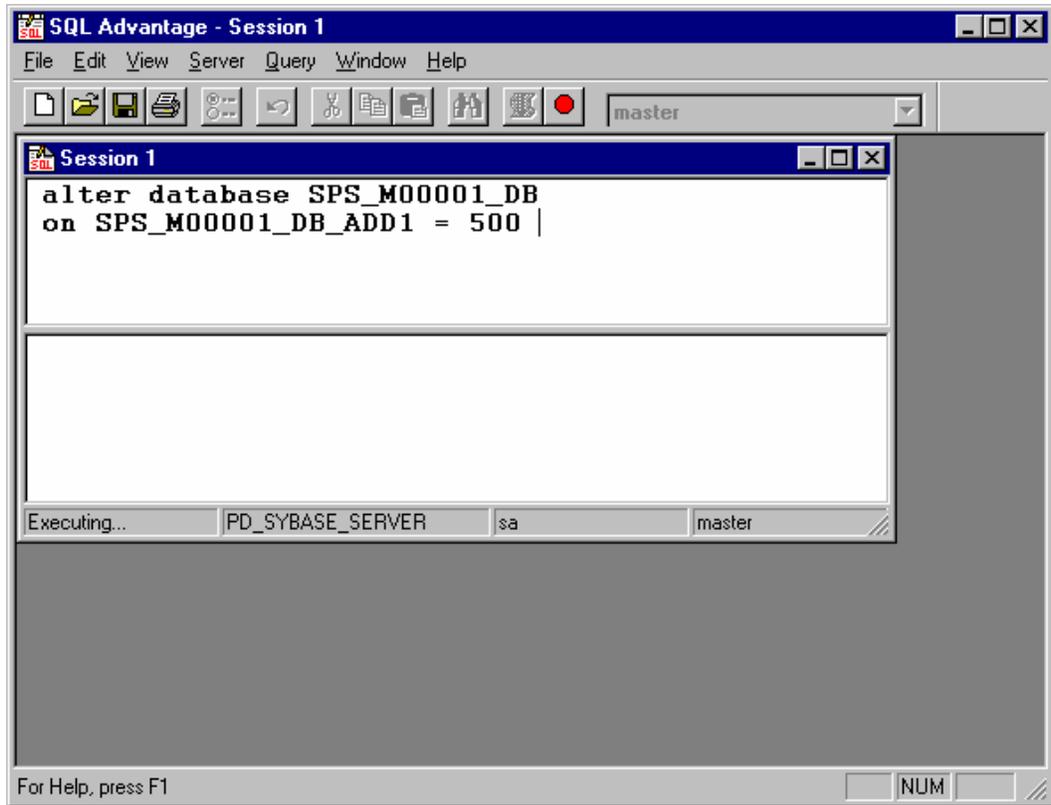


Figure 21: Example of "alter database" command

Execute the entire statement. When it is finished the microhelp in the lower left-hand corner will change from "Executing" to "Ready" and the following message will appear in the message window.

```
Server Message: Number 5005, Severity 10
Line 1:
Extending database by 256000 pages on disk
SPS_M00001_DB_ADD1
```

If you are using WISQL or WISQL32 the following message may appear.

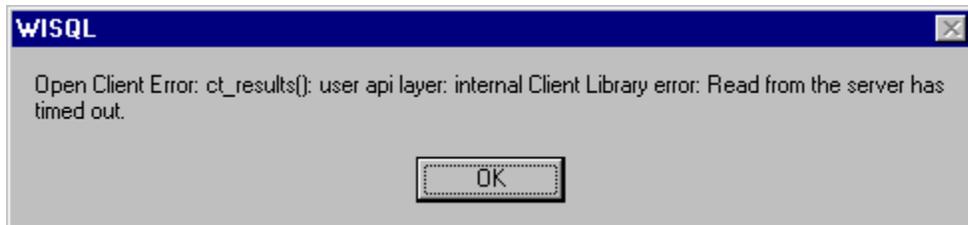
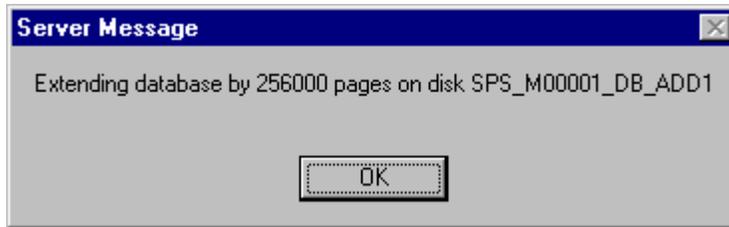


Figure 22: Time Out Message

Click the OK button. This message will appear every 60 seconds while the device is being attached. **DO NOT ABORT QUERY.** When the process is complete you will receive the following message.



Click OK. Then verify that the database has been increased by using one of the Verification methods listed in section 2.

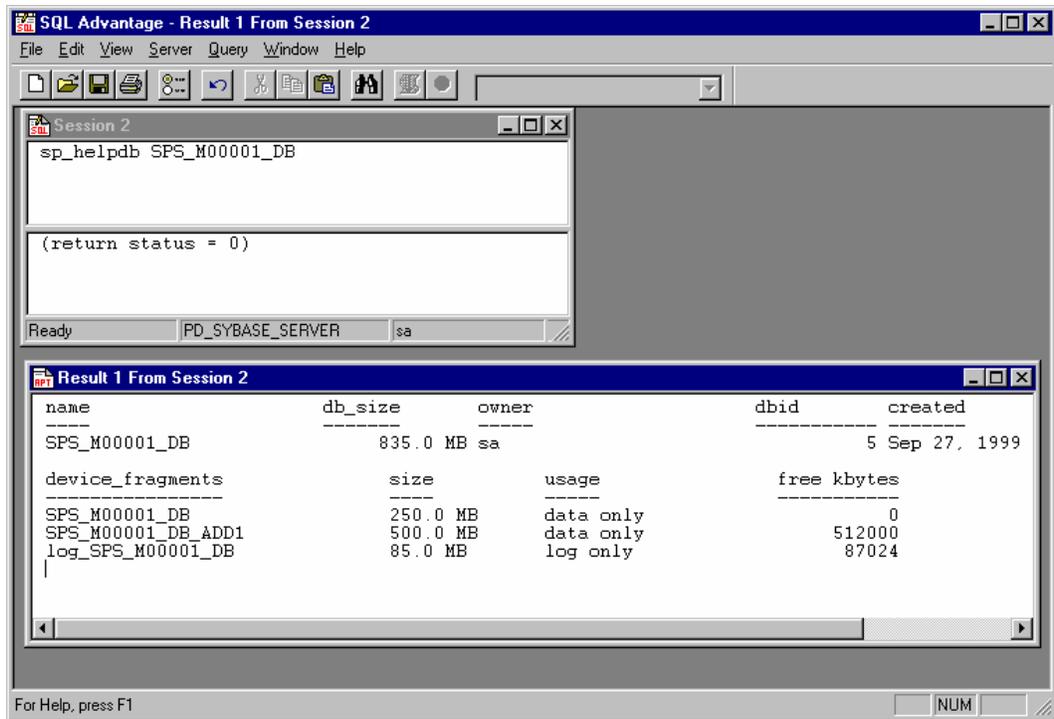


Figure 23: Results from "sp\_helpdb"

Once you have completed Part I and II, your users can log back into PD<sup>2</sup> and continue working.