



Troubleshooting BDE Errors in PLATO Pathways

A white paper from PLATO Support Services

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■ Introduction

The PLATO® Pathways Learning Management System uses the Borland® Database Engine (BDE) for its database operations. Under optimal circumstances, the database performs its function quietly in the background, recording data or providing the user with requested information.

Optimal circumstances are assured by proper network maintenance, including, but not limited to:

- ✚ Proper and regular backups
- ✚ Activated and updated antivirus software on workstations and servers
- ✚ Server UPS protection
- ✚ OS patches and service packs
- ✚ Properly configured switches

Lack of these maintenance items can lead to “less than optimal” circumstances and the potential for many problems, including possible BDE errors.

Borland Database Engine errors can present themselves in numerous forms. Sometimes they present themselves as Exception Borland Database Engine errors (EBDEngine errors). An “exception” is an unanticipated error; for example, a database operation where two values are divided and the divisor is zero, or trying to write to a file that is read-only.

In order to effectively troubleshoot BDE errors in PLATO Pathways, a basic understanding of how the program works is helpful.

How PLATO Pathways works

Server role

- Shares the necessary files, like courseware, audio, graphics and databases
- Sends files to the workstations when requested
- Writes information to database files as students progress

Workstation role

- Runs the PLATO Pathways program, including the Borland Database Engine (BDE) on each station when launched
- Uses the BDE to process data and returns information to the server

Network infrastructure role (cables, switches and/or hubs)

- Carries data back and forth from the workstations to the server
- Manages traffic between the workstations and the server

Therefore, it is logical to assume that the successful function of the Borland Database Engine is dependent upon the integrity of the BDE program itself on the workstation,

the uninterrupted transmission of database files between the workstation and server over the network infrastructure, and intact databases on the server.

The troubleshooting steps in this white paper and instructions in associated knowledge base articles should be completed by a qualified computer/network technician or administrator. Anyone who is not a qualified technician or administrator should consult with the appropriate personnel.

■ Identifying BDE errors

If a BDE error occurs, a descriptive error message usually displays on the screen. The first step to identify and correct your suspected database engine problem should be to visit the knowledge base at the PLATO Support Center:

<http://support.plato.com/kb>

Simply enter key words from the error message into the search field to browse a collection of possible fixes for your specific situation.

■ PLATO Pathways Error Logs

Sometimes you may need to review an error log for specific information about a problem. Generally, BDE errors are recorded in the PWAY\BIN\TROEXCPTN.LOG file.

Example of a BDE error in the TROEXCPTN.LOG:

```
16:05:50.097 ----- Exception in D:\PWAY\DB\USER\Users.db.Open -----
16:05:50.107      Date of Msg : 9/16/2005
16:05:50.117      Application : D:\PWAY\BIN\WCMIADMN.EXE (PLATO@
Pathways Administration)
16:05:50.127      Type           : EDBEngineError
16:05:50.137      Message        : Directory is controlled by other .NET
file.
Directory: C:\WINDOWS\PWAY\DB\
File: D:\PWAY\DB\USER\PDOXUSRS.LCK
16:05:50.147      Workstation   : 1
16:05:50.157      User ID        : 258 (102) Black
```

As shown above, errors recorded in the TROEXCPTN.LOG provide you with the following important information:

- ✚ *First line:* The database being accessed, the table which had the problem, and what PLATO Pathways was attempting to do with the table when the problem occurred.
- ✚ *Message:* The exact error message text
- ✚ *Workstation:* The workstation ID (the workstation that had the problem)
- ✚ *User ID:* Database ID# and last name of user

This information in the error log is helpful when you contact PLATO Support Services or browse the knowledge base.

Note that error messages displayed on your screen or recorded in the error log include the error *type* and a specific error *message*.

For best results when you search the knowledge base for help, search on key words in the *specific error message* (see highlighted sections below for examples). Searching on the error type ("EDBEngineError" in the examples below) will not provide effective search results, as there may be hundreds of errors of the same type.

```
15:09:48.740 ----- Exception in Q:\PWAY\PRIVDB\B44\UClassLt.Open -----  
--  
15:09:48.740      Date of Msg : 09/12/05  
15:09:48.740      Application : Q:\PWAY\BIN\WCMIADMN.EXE (PLATO®  
Pathways Administration)  
15:09:48.740      Type          : EDBEngineError  
15:09:48.740      Message       : Index is out of date.  
Table: Q:\PWAY\PRIVDB\B44\UClassLt.DB  
15:09:48.790      Workstation  : 42  
15:09:48.790      User ID       : 201 (103) Administrator
```

```
12:53:34.656 ----- Exception in Q:\PWAY\PRIVDB\353\PERFORM.Open -----  
-  
12:53:34.671      Date of Msg : 9/24/2005  
12:53:34.687      Application : Q:\PWAY\BIN\MgrtUtil.EXE (Performance  
Migration)  
12:53:34.687      Type          : EDBEngineError  
12:53:34.687      Message       : Directory is controlled by other .NET  
file.  
Directory: C:\WINDOWS\PWAY\DB\  
File: Q:\PWAY\PRIVDB\353\PDOXUSRS.LCK  
12:53:34.703      Workstation  : 221  
12:53:34.718      User ID       : No user information available.
```

```
12:15:34.906 ----- Exception in Q:\PWAY\PRIVDB\2C1\Attend.Open -----  
12:15:34.906      Date of Msg : 9/17/2005  
12:15:34.906      Application : Q:\PWAY\BIN\WCMILRNR.EXE (PLATO®  
Pathways Learner)  
12:15:34.906      Type          : EDBEngineError  
12:15:34.906      Message       : Lock time out.  
Table: Q:\PWAY\PRIVDB\2C1\Attend.DB  
12:15:34.906      Workstation  : 20328  
12:15:34.906      User ID       : 710 (2C1) Harriet Bishop
```

Key Violation Errors

A key violation is a Borland Database Engine *integrity violation* error. Key violations can occur for any of the following reasons:

- The PLATO Pathways system file (SYSID.PWY), which is used to generate keys, is corrupt. When the SYSID.PWY file is corrupt, the key values it generates become "out of sync" and the system can generate keys that already exist. This produces key violations.
- A file in the \REPORTS directory is corrupt.
- Insufficient rights or permissions to PLATO Pathways files or folders are producing "waiting for IDS file resource" or "corrupt SYSID.PWY" errors.
- You reinstalled PLATO Pathways and then restored the DB, PRIVDB and PRIVATE folders from a backup, but not the SYSID.PWY file. When you try to add new users or activities, the SYSID.PWY file gives out IDs that it thinks are available, but are actually in use. To prevent this problem, the SYSID.PWY file and the WCMISYS.INI file should be backed up along with the \DB, \PRIVDB, and \PRIVATE folders.

Use the chart below to help you identify and resolve key violations. The instructions link to articles in the knowledge base, which are available to you 24/7.

If the problem occurs...	If the error message is...	Follow these instructions
When you try to sign on to PLATO Pathways	<ul style="list-style-type: none"> ■ Waiting for IDS file resource. Click cancel to stop waiting ■ Possible corruption of SYSID.PWY file ■ Unable to get workstation ID 	25262
When you try to create or modify a user	<ul style="list-style-type: none"> ■ Key violation 	25262
When you try to create or modify a class	<ul style="list-style-type: none"> ■ Key violation 	25262
When you try to create or modify an assignment	<ul style="list-style-type: none"> ■ Key violation 	25262
When you try to create or modify an activity	<ul style="list-style-type: none"> ■ Key violation 	25262
When you try to create or modify a report	<ul style="list-style-type: none"> ■ Key violation 	25262
When you try to consolidate reports	<ul style="list-style-type: none"> ■ Key violation 	25772
When you try to run the workstation setup program (WSETUP.EXE)	<ul style="list-style-type: none"> ■ Waiting for IDS file resource. Click cancel to stop waiting ■ Possible corruption of SYSID.PWY file ■ Unable to get workstation ID 	25262

BDE ERROR LIST

Following is a list of known BDE error messages along with (where applicable) the direct links to their known solution in the knowledge base. Before you panic at the length of the list, please know that most PLATO Pathways users never see any of these errors. If you are among the select few that have errors, it is beneficial to know the likely cause and how to correct it.

If you are viewing the electronic form of this document and have Internet access, the links to knowledge base articles can be activated by holding the Ctrl key and clicking on the link.

System-Related (Fatal Error)

- \$2101 Cannot open a system file
- \$2102 I/O error on a system file
- \$2103 Data structure corruption
- \$2104 Cannot find Engine configuration file
- \$2105 Cannot write to Engine configuration file
- \$2106 Cannot initialize with different configuration file
- \$2107 System has been illegally re-entered
- \$2108 Cannot locate IDAPI32 .DLL (See article [23640](#))
- \$2109 Cannot load IDAPI32 .DLL (See article [25269](#))
- \$210B Cannot create or open temporary file
- \$210C Trying to load multiple IDAPIxx.DLL
- \$210D Shared memory conflict (See article [24274](#))

Physical Data Corruption

(See articles [23359](#), [23410](#), and [25485](#))

- \$2301 Corrupt table index header
- \$2302 Corrupt file other than header
- \$2303 Corrupt memo BLOB file
- \$2305 Corrupt index
- \$2308 Corrupt or missing .VAL file

I/O Related Error

- \$2401 Read failure
- \$2402 Write failure
- \$2403 Cannot access directory (See article [23640](#))

Resource or Limit Error

- \$2501 Insufficient memory for this operation (See article [24274](#))
- \$2502 Not enough file handles (See "Check Maximum File Handles" in article [21071](#))
- \$2503 Insufficient disk space (See article [22855](#))
- \$2504 Temporary table resource limit
- \$2505 Record size is too big for table

BDE ERROR LIST

Resource or Limit Error, *continued*

- \$2507 Table is full (See article [24284](#))
- \$250A Some internal limit
- \$250B Too many open tables
- \$250D Too many record locks on table
- \$2517 Lock file has grown too large
- \$251E Insufficient shared memory available (See article [24274](#))

Integrity Violation

- \$2601 Key violation (See article [25262](#))

Invalid Request

- \$2701 Number is out of range
- \$2703 Invalid file name
- \$2704 File does not exist (See articles [22416](#), [25485](#), [24142](#), [23640](#))
- \$2708 Cannot open file
- \$270D Index does not exist (See article [23106](#))
- \$271B Invalid session handle
- \$2722 Invalid directory
- \$2723 Translate Error; value out of bounds
- \$2728 Table does not exist (See articles [23108](#), [22720](#), [23268](#), , [24405](#))
- \$272B Index already exists
- \$273F Destination must be indexed (See article [24284](#))

Locking / Contention Related

(See articles [23112](#), [22593](#))

- \$2801 Record locked by another user
- \$2802 Unlock failed
- \$2803 Table is busy
- \$2804 Directory is busy
- \$2805 File is locked (See articles [22416](#), [23640](#), [23106](#))
- \$2806 Directory is locked (See articles [22593](#), [2241625485](#), [24142](#))
- \$2809 Lock time out (See article [25485](#))
- \$280B Table lock was lost
- \$280D Table cannot be opened for exclusive use

BDE ERROR LIST

Access Violation - Security Related

(See articles [22416](#), [24404](#), [23725](#), [23826](#))

\$2901 Insufficient field rights for operation
\$2902 Insufficient table rights for operation
\$2904 This directory is read only
\$2905 Database is read only
\$2906 Trying to modify read-only field

Invalid Context

\$2A0D Table(s) open. Cannot perform this operation on a closed dataset.
\$2A0F Index is read only

O/S Error Not Handled by IDAPI

\$2B01 Invalid function number
\$2B02 File or directory does not exist (See articles [22416](#), [25485](#), [24142](#), , [23640](#))
\$2B03 Path not found
\$2B04 Too many open files. You may need to increase MAXFILEHANDLE limit in IDAPI configuration. (See article [23706](#))
\$2B05 Permission denied (See article [23106](#))
\$2B06 Bad file number
\$2B07 Memory blocks destroyed
\$2B08 Not enough memory (See articles [21071](#), [24494](#))
\$2B09 Invalid memory block address
\$2B0C Invalid access code
\$2B0D Invalid data
\$2B13 Invalid argument
\$2B23 File already exists
\$2B27 Unknown internal operating system error
\$2B32 Share violation (See articles [23406](#), [25055](#))
\$2B33 Lock violation
\$2B35 Drive not ready
\$2B64 Not exact read/write
\$2B65 Operating system network error
\$2B66 Error from NOVELL file server
\$2B67 NOVELL server out of memory
\$2B68 Record already locked by this workstation
\$2B69 Record not locked

BDE ERROR LIST

Network Related

\$2C01 Network initialization failed
\$2C02 Network user limit exceeded
\$2C03 Wrong .NET file version
\$2C04 Cannot lock network file
\$2C05 Directory is not private
\$2C06 Directory is controlled by other .NET file (See article [24277](#))
\$2C07 Unknown network error
\$2C08 Not initialized for accessing network files
\$2C09 SHARE not loaded. It is required to share local files.
\$2C0A Not on a network. Not logged in or wrong network driver
\$2C0B Lost communication with SQL server
\$2C0D Cannot locate or connect to SQL server
\$2C0E Cannot locate or connect to network server

Version Mismatch

\$2F01 Interface mismatch. Engine version different.
\$2F02 Index is out of date (See article [23410](#))
\$2F03 Older version
\$2F04 .VAL file is out of date

Miscellaneous

\$3302 BLOB has been modified (See article [24315](#))

■ General Troubleshooting of BDE errors

If the BDE Error List does not have an entry that addresses your situation, please proceed with the following step-by-step guidelines to help you troubleshoot general BDE errors.

Note: In general, the more users you have rostered in your system, the more time PLATO Pathways takes to process information at logon and especially when doing database repair tasks. Whenever possible, we recommend that you delete all users that will no longer be using the PLATO system.

WARNING: Deleting users will permanently remove them from the system. If user data may be needed in the future, run and print reports to obtain the necessary data before deleting students.

Step 1: Run \PWAY\BIN\LOCKCLR.EXE. This will remove all extraneous lock files on databases. All users should be logged out of Pathways in order to clear all locks. If the utility reports that there are files that could not be

deleted, we recommend restarting the server and running the LOCKCLR utility again to remove all the extraneous lock files.

Step 2: Determine if the problem is isolated to a single workstation or user, or if the problem is system wide. If possible, have the user experiencing problems sign on to PLATO Pathways on another workstation. If the problem does not follow the user, then most likely the problem is with the workstation and you should go to Step 5.

Step 3: Confirm that you have a recent backup of your system. The following folders should be backed up in their entirety: \PWAY\DB, \PWAY\PRIVATE and \PWAY\PRIVDB. Please refer to article [23180](#).

Step 4: Run \PWAY\BIN\WCMIDBRU.EXE; click Start. (For instructions on how to run this utility, please see article [23359](#)). This utility will check all of the system databases for integrity and attempt to correct problems.

<p>CAUTION: Once the repair utility starts, do not stop the process before it finishes, as severe database damage can result. (Do not press CTRL + ALT + DELETE to use Task Manager to end the task.)</p>
--

Clicking on the **Details** button provides you with an instant display of any problems detected and the results of attempts to repair them. A log entry for this process can be viewed in the \PWAY\LOGS\DBRU folder.

After you run the repair utility, test the system to see if the problem is resolved. If the problem persists, contact PLATO Support Services.

Step 5: Restart the workstation and try to run PLATO Pathways. If the problem is not resolved, please continue with the next step.

Step 6: Run \PWAY\BIN\WCMIUDBR.EXE. (For instructions on how to run this utility, please see article [24347](#)). This utility checks the users specific database files. From the presented Windows, you have the option to Select All users or only those users that are known to be experiencing problems. Individual users may be selected by holding down the CTRL key and then clicking on the desired user's name. A log entry for this process can be viewed in the \PWAY\LOGS\UDBR folder.

If running the user repair utility does not solve the problem, continue with the next step.

Step 7: Uninstall and reinstall the Borland Database Engine (BDE) on the workstation by following the steps below:

Log on as an administrator on the workstation and temporarily disable any antivirus or security software programs that are running.

- a. Use Windows Explorer or My Computer to navigate to C:\Program Files\Borland\Common Files.
- b. Right-click the BDE folder (this folder contains the 32-bit BDE), and then click Delete.
- c. Run the Pathways workstation setup program, which will install a fresh copy of the Borland Database Engine. (Go to the drive PLATO Pathways is installed on. Open the \PWAY folder, and then double-click WSETUP.EXE.)
- d. Restart the computer when you are prompted to do so.
- e. Sign on to PLATO Pathways. The problem should be resolved.

If the problem persists, please contact PLATO Support Services for help.

■ Contacting PLATO Support Services

By using the resources available to you at the PLATO Support Center (<http://support.plato.com>) and in the knowledge base (<http://support.plato.com/kb>), you will be able to resolve most BDE errors yourself. In rare cases, you may be unable to resolve a BDE error by following standard instructions. In these rare cases, complex troubleshooting is required. Contact PLATO Support Services to get help with identifying and resolving the root of the problem.

Phone: (800) 869-2200

Email: <http://support.plato.com/email>

Web site: <http://support.plato.com>

■ Field Engineering Services

If you do not have your own network administrator to identify problems in your network and troubleshoot persistent BDE Errors, consider having a certified PLATO Learning Field Engineer work with you onsite. PLATO Learning's highly trained Field Engineers provide the following fee-based services, customized to your needs:

- Onsite hardware, network, and software installation
- Onsite technical support
- Specialized technical consulting for PLATO Learning software-related issues

Call 800.44.PLATO or e-mail info@plato.com for more information and rates.

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Author: Allan Horton, Field Engineer
Co-Authors: Eric Kallus, Laurence Hart, Cindy Coffin