

FairCom White Paper

Pending File ID Overflow

Audience

Developers

Subject

**An explanation of the warning: “Pending File ID
Overflow”**



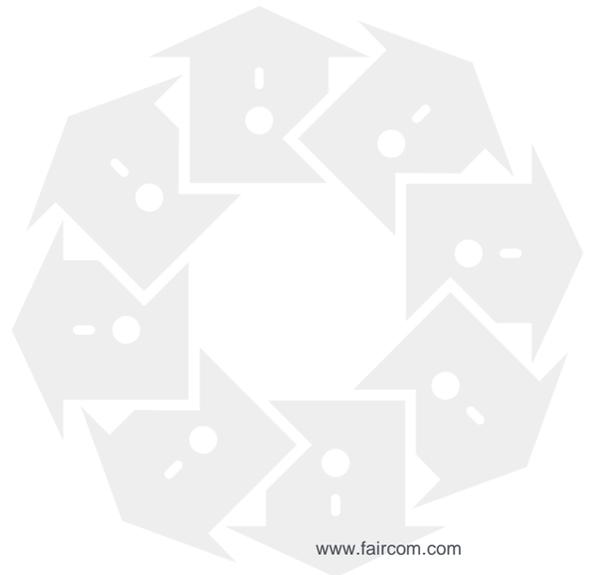
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1. Pending File ID Overflow

The following warning message indicates that the FairCom DB Server internal file ID array is getting close to its upper limit:

Pending File ID Overflow

This issue is more common on older FairCom DB Server versions (before revision 26980) because they used file ID numbers each time a c-tree data or index file was physically opened, even if it was just read, not written. Now FairCom DB uses a file ID number only when a file is physically opened and then updated.

This paper explains the message and provides actions to take when it is seen.

1.1 Understanding the Warning Message

The “Pending File ID Overflow” message indicates that the FairCom DB Server internal file ID numbers are getting close to the upper limit.

Each time a transaction controlled c-tree data file or index file is opened, the value of its file ID number is increased. If your system has a large number of files, this value can increase a fair amount with each day of processing.

- The upper limit for this value is: 4,294,963,200

If the upper limit is hit, the Server process will shut down.

- The value at which a “Pending File ID Overflow” warning message first appears is: 4,227,858,432

The message “Pending File ID Overflow” will be written to *CTSTATUS.FCS*. A new entry will be logged every time another 10,000 numbers are used.

From the time the first warning message appears, you have at most 67,104,768 additional data file and index file opens before this value hits this limit.

When the transaction file numbers have been exhausted, error **534** and the following message will be logged in *CTSTATUS.FCS*:

```
- User# 00018          Pending File ID overflow: 534
- User# 00018          018 M18 L58 F-1 Pffffff003x (recur #1) (uerr_cod=534)
```

If you get error **534**, you must do a transaction log reset.



1.2 Determining the Current File ID

To determine the current value of your system's file ID number, you can use the **ctstat** transaction snapshot (**ctstat -vat**). The file ID number is shown as the `tfil` value (the sample below shows `tfil` of 233):

```
ctstat -vat -h 1 -i 1 1 -t -s FAIRCOMS
```

lowlog	curlog	lstent	lstpnt	lstsuc	tranno	tfil
46	49	3217645	3217445	0	1045589	233

See Also:

- For more about **ctstat -vat**, see *Transaction Statistics Example* (<http://docs.faircom.com/doc/ctserver/60944.htm>) in the *FairCom DB Server Administrator's Guide*.
- For more about monitoring, see *Monitoring FairCom DB Transaction Numbers and Transaction File Numbers* (<http://docs.faircom.com/doc/knowledgebase/70287.htm>) in the *Monitoring Performance* section of the *Knowledgebase*.

1.3 Recommended Actions

The following actions are suggested when the file ID warning message is seen.

First, determine how much time you have before the upper limit is hit and the server shuts down:

1. Use the **ctstat -vat** command (as shown in the *previous section* (page 2)) on one of your highest number transaction logs to get the current file ID setting. Notice that this setting is only captured at the initial log creation, so it will increase during the processing of the active log.
2. Execute the **ctstat -vat** command on transaction logs from the previous day, first with the earliest log for the day and then with the last log for the day.
3. Calculate the difference in the file IDs. This will give you an idea of how many file IDs you have consumed during a given day so you can determine if you can safely wait until the next scheduled system restart.

Once you can safely shut down the system, be sure to shut it down cleanly. The best practice recommendation for shutting down FairCom DB Server is as follows:

1. Cleanly shut down the FairCom DB Server.
2. Restart the FairCom DB Server and prevent any users from connecting.
3. Cleanly shut down the FairCom DB Server a second time.
This second shutdown ensures that any pending transactions in the current logs are processed.
4. Now you may safely move the existing transaction logs to a new location. Move the following files: `*.FCS` and `*.FCT`
5. Copy the `FAIRCOM.FCS` file back to its original location.
The only `*.FCS` to keep in your current directory is `FAIRCOM.FCS`. Keeping the `FAIRCOM.FCS` file will NOT impact the File ID setting.



FAIRCOM.FCS stores user information such as user IDs, so if you don't keep this file, you will have to recreate your users.

- Restart the FairCom DB Server and it will create new transaction logs from scratch. You may confirm this by looking at the file names of the transaction logs (on Unix/Linux: **ls L*.FCS**) and you should see the first *L*.FCS* has been reset to number *L*00001.FCS*

If you would like to confirm that the file ID value has been reset, you can execute the **ctstat -vat** command again. You should see the file ID value is now a very low number.



2. Document History

Date	Change
08/25/2016	Added procedures for <i>Determining the Current File ID (page 2)</i> and hyperlinks to related information.
08/04/2014	First Posted

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4/15/2021

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