
GroupWise Data Recovery

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GroupWise Data Recovery 101

Many of our customers have asked us what files are needed in order to restore data and provide forensics work on a GroupWise System. This article will cover the basics of what is needed and hopefully clear up any confusion around requirements for GroupWise Data Recovery.

Like most email systems, GroupWise consists of a series of databases. There are 2 types of databases in a GroupWise System. Administrative and Message Store. The administrative databases are required in order to manage or manipulate the GroupWise System. These are necessary for upgrading the system or changing passwords in order to access the message store. The message store databases are where the actual messages are stored, and are obviously crucial for restoring messages.

Administrative messages consist of Domain and Post Office database files. The easiest way to confirm whether you have the necessary Domain and Post Office database files are to search for anything called wpsdomain.db (Domain database) and wphost.db (post office database). The following discussion will go into greater detail concerning this.

Administrative Files **Domain Database**

The most important administrative file for successful GroupWise Recovery is the Primary Domain. This file allows us to import the GroupWise System into our tree, which is the only way a GroupWise System can be manipulated (ie., change passwords for users, change directory locations, etc.) Without this file, the GroupWise System cannot be manipulated to access the message store.

All domains (primary or secondary) have the same name, that is **WPDOMAIN.DB**. The Primary Domain is the master domain that has all the information in it and you can use it to build the rest of the administrative system. You can't rebuild messages, but you can rebuild domains, post offices, users, resources, etc. Here's a typical Domain Directory. The files that are critical for a restore are highlighted in bold-blue.

```
06/17/2004 05:13 PM <DIR>      wpcsout
06/17/2004 05:13 PM <DIR>      wpcs
06/17/2004 05:13 PM <DIR>      wpcsin
06/17/2004 05:13 PM <DIR>      wpgate
06/17/2004 05:13 PM <DIR>      wpooffice
06/17/2004 05:13 PM <DIR>      wptemp
06/17/2004 05:13 PM <DIR>      wptools
03/08/1999 04:21 PM          10,942 wphost.dc
06/17/2004 05:13 PM      2,062,336 wpsdomain.db* – this is the domain database
08/13/2002 05:02 PM          17,743 gwdom.dc
08/13/2002 05:02 PM          17,111 gwpo.dc
06/17/2004 05:15 PM              0 test.txt
03/08/1999 04:21 PM          11,561 wpsdomain.dc
```

As long as this is the Primary Domain database, its all we need from a domain perspective. The rest of the files in this directory can be created. But, you might as well send the whole directory structure as it will give us additional information about the system, such as

which gateways are being used or perhaps if there are messages stuck in some of the queue directories (wpcsin/wpcout).

Post Office Database

The next administrative file we need is the post office database or the WPHOST.DB. It will be discussed below in the message store discussion as a post office database is a key database in the message store. A post office database can be created using the domain database listed above, however, it has to be the database that matches the message store, so it's important to keep the WPHOST.DB and its message store together.

Post Office and Message Store files

The post office database (WPHOST.DB) is crucial for accessing the message store. It holds the authentication keys that allow one to connect to a GroupWise Post Office, accessing the message store.

Here's a list of a typical post office directory. Those directories and files that are bold-blue are absolutely crucial for being able to manage a post office and restore data from that post office:

06/15/2004	01:55 PM	<DIR>	OFMSG*
06/15/2004	01:54 PM	<DIR>	OFUSER*
06/15/2004	01:55 PM	<DIR>	OFFILES*
06/15/2004	01:54 PM	<DIR>	OFVIEWS
06/15/2004	01:54 PM	<DIR>	OFWORK
06/15/2004	01:54 PM	<DIR>	WPC SIN
06/15/2004	01:54 PM	<DIR>	WPCSOUT
08/10/1994	05:10 AM		4,157 OFMSG.DC
06/15/2004	01:49 PM		1,445,888 WPHOST.DB *
08/13/2002	05:02 PM		17,111 GWPO.DC
06/15/2004	01:35 PM		161,792 NGWGUARD.DB* – only in post 5.1 Systems
03/31/2003	07:44 PM		104,083 NGWGUARD.DC
06/15/2004	01:35 PM		161,792 NGWGUARD.FBK* – only in post 5.1 Systems
06/15/2004	01:35 PM		24 NGWGUARD.RFL* – only in post 5.1 Systems
08/10/1994	05:10 AM		6,056 OFUSER.DC
03/08/1999	04:21 PM		10,942 WPHOST.DC

The other files and directories are good to have, but can be recreated as needed via GroupWise Administration. The WPHOST.DB is the actual post office file, the NGWGUARD files are all supportive to the post office and we need the originals in order for us to build the post office correctly.

All of the actual messages store files themselves are in the OFUSER, OFMSG, and OFFILES directories. Without these directories, there is no point in sending a post office as there will be no data to restore. However, just sending empty directories would accomplish the same thing, so let's discuss the files that should be in these directories, both quantity and type.

OFUSER

The OFUSER directory will have a series of files that look like this: USERXXX.DB, where xxx represents a unique ID. Each user in the post office has their own user database and it's uniquely identified by their FID or File ID. For example, USERMTU.DB would be the database for a user whose FID is MTU. There should be 1 user database for every user in

the post office and they should be of varying size. If every database in the directory is the same size, be suspicious of the restore. This is because every user stores mail differently. Some delete everything and others keep everything (we know who you are!). Thus, in a typical GroupWise System (or any email system for that matter) the databases will be of varying size.

Here's a sample directory listing:

```
08/30/1998 02:25 AM      249,856 USERWL9.DB
08/30/1998 02:26 AM      420,864 USERXEK.DB
08/30/1998 02:26 AM      207,872 USERY0T.DB
08/30/1998 02:26 AM     1,078,272 USERY7Y.DB
08/30/1998 02:26 AM      993,280 USERY8Z.DB
08/30/1998 02:26 AM     1,305,600 USERZ8Z.DB
08/30/1998 02:25 AM      840,704 USERZL1.DB
08/30/1998 02:25 AM      741,376 USERZL2.DB
      68 File(s)  43,168,833 bytes
      3 Dir(s)  25,003,036,672 bytes free
```

OFMSG

The OFMSG directory will have a series of around 25 files that all look like this: MSGXX.DB. The XX represents a number between 0-24, typically, so you would have MSG0.DB through MSG24.DB, although in some systems there are more than 25 files. These files are shared by all users in the post office and should be of varying size. There will be some other files in this directory, but the MSG files are the most critical.

Here's a sample directory listing:

```
08/30/1998 01:01 AM      557,056 MSG22.DB
08/30/1998 01:00 AM     3,293,184 MSG23.DB
08/30/1998 01:00 AM      473,088 MSG24.DB
08/30/1998 01:00 AM      649,216 MSG3.DB
08/30/1998 01:00 AM     3,241,984 MSG4.DB
08/30/1998 01:01 AM     1,974,272 MSG5.DB
08/30/1998 01:00 AM     1,282,048 MSG6.DB
08/30/1998 01:00 AM     2,136,064 MSG7.DB
08/30/1998 01:00 AM     1,015,808 MSG8.DB
08/30/1998 01:00 AM     1,200,128 MSG9.DB
      25 File(s)  40,714,240 bytes
      3 Dir(s)  25,003,036,672 bytes free
```

When sending any of these directories, don't try to pick files out to send, but rather zip the entire directory structure, from the directory the contains the WPHOST.DB and all of its subdirectories.

OFFILES

The OFFILES directories contain the bulk of the space in a post office and there are potentially hundreds of directories and thousands of files in this directory structure. A simple directory listing or right clicking and going to properties on this directory, should show you thousands of files in this directory structure. There is no use in verifying all the files in this directory structure, except perhaps to ensure that the bulk of the post office is contained in these directories. If you have an OFMSG directory that is 100 Megs and an OFFILES

directory structure that is 50 Megs, then there may be a problem with the OFFFILES directory. Typically the OFFFILES directory structure is the largest part of the post office.

A sample listing of the root of the OFFFILES directory will show a number of FDXX directories. The bigger the post office, the more directories and more complicated the names. Here's a simple OFFFILES directory listing:

```
08/26/2004 10:46 PM <DIR>      .
08/26/2004 10:46 PM <DIR>      ..
08/26/2004 10:47 PM <DIR>      FD0
08/26/2004 10:46 PM <DIR>      FD1
08/26/2004 10:45 PM <DIR>      FD2
08/26/2004 10:44 PM <DIR>      FD3
08/26/2004 10:43 PM <DIR>      FD4
08/26/2004 10:42 PM <DIR>      FD5
08/26/2004 10:41 PM <DIR>      FD6
08/26/2004 10:39 PM <DIR>      FD7
08/26/2004 10:38 PM <DIR>      FD8
08/26/2004 10:37 PM <DIR>      FD9
08/26/2004 10:36 PM <DIR>      FDA
08/26/2004 10:35 PM <DIR>      FDB
08/26/2004 10:35 PM <DIR>      FDC
08/26/2004 10:34 PM <DIR>      FDD
08/26/2004 10:33 PM <DIR>      FDE
08/26/2004 10:32 PM <DIR>      FDF
      0 File(s)          0 bytes
      18 Dir(s) 28,163,239,936 bytes free
```

Summary

In review, a valid GroupWise System will consist of at least 1 WPDOMAIN.DB and its directory, and at least 1 Post Office directory containing a WPHOST.DB and supporting NGWGuard.DBs, and under the Post Office directory will be at least 3 additional directories, OFUSER, OFMSG, OFFFILES, that will contain a number of files of varying size. If a GroupWise System doesn't have at least this, then there may be problems accessing it and restoring files and data from it.

Archives:

Another set of GroupWise files we have been asked to restore from are Archives. Archives are offline directories containing messages that users have "archived" from within GroupWise. They could be called "mini post offices," and they borrow file structures from the regular Post Office. A typical archive directory will contain at least the following files, USER.DB, MSG.DB, NGWGUARD.DB, as well as a bunch of attachment files with strange names. Below is a capture of part of an archive directory. The critical files are listed in blue-bold:

```
10/01/2004 01:09 AM      3,692 415cae34.001
10/01/2004 01:09 AM      2,472 415cae34.002
10/01/2004 01:09 AM      2,544 415cae34.003
10/01/2004 01:09 AM      8,836 415cae35.000
10/01/2004 01:09 AM      2,340 415cae35.001
```

10/01/2004 01:09 AM	8,067,072	msg.db
04/29/2004 07:34 AM	229,376	ngwguard.db
03/31/2003 05:44 PM	104,083	ngwguard.dc
10/01/2004 01:09 AM	2,350,080	user.db

3139 File(s) 25,566,339 bytes
2 Dir(s) 28,163,239,936 bytes free

Note that the USER and MSG dbs are not uniquely identified as in the Post Office. This is because each archive directory is uniquely identified with the user's FID or File ID. The directories are in the following format:

X:\Archive\OFXXXARC

The "X:\Archive" isn't important, although in GroupWise, the path to this archive would be X:\ARCHIVE. The crucial directory, however, is what GroupWise creates under that path, which is the OFXXXARC directory. As you've probably already guessed, the XXX represents each user's File ID.

Summary

In review, a valid archive directory will contain at least a USER.DB, MSG.DB, NGWGUARD.DB, and many attachment files of varying size and name. A typical network installation of archive directories will be to a common area. So, perhaps X:\ARCHIVE is a common drive letter for everybody and all of their archives are stored in that same area.

For your information, we have the ability to get into a user's archive with or without the post office for that user.

A Checklist

The following is a checklist to make sure the GroupWise System being sent has all the crucial files needed for a restore.

1. Primary Domain (WPDMAIN.DB) and its directory structure
2. Post Office Database (WPHOST.DB)
3. Post office supporting files – ngwguard.db, ngwguard.rfl, ngwguard.fbk
4. Post office directory structure, including:
 - a. OFFILES
 - b. OFMSG
 - c. OFUSER
5. Check to make sure there are files in the OFMSG and OFUSER directories that are of varying size.
6. Check to make sure there are hundreds if not thousands of files and directories in the OFFILES directory (right click on OFFILES, go to properties).
7. For archives, go to the archive directory structure (OFXXXARC directory) and verify that there is a user.db, a msg.db, ngwguard.db, and many supporting or attachment files.

About MC Consulting

MC Consulting – GroupWiseGuru.com is a GroupWise Consulting firm that specializes in everything to do with GroupWise. We've been working on GroupWise since 1991 when it was WordPerfect Office. Whether you're looking for help with your current GroupWise System or a backup of your GroupWise System, we can help. We also provide GroupWise services such as Upgrades (4.X, 5.X, 6.X, or 7.X), Migrations (migrate from Exchange or other email system to GroupWise or migrate from NetWare or Windows to LINUX), Health Checks & Optimization Reviews, Security Assessments, GroupWise Backup/Restore Automation, Enterprise-level Archiving Solutions, Anti-Virus/Anti-Spam Solutions, and much more. Contact us for all your GroupWise needs.

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