

DELL EMC NetWorker Plugin Configuration Guide SUPPORT ADDENDUM

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Purpose of This Guide

The purpose of this guide is to provide Bocada support a means of addressing the needs of customers using deprecated or legacy methods to collect data fom NetWorker servers.

The original plugin guide describes some of the GST and savegroup.log methods, but directs customers to Bocada Support to ensure they are using the preferred methods wherever possible.

Requirements

Data Sources

This contains only the additional requirements to support GST or Savegroup Log collection.

Data Source	Collection Type	Connection Method	NetWorker Version	Notes
savegrp.log	Backup	SMB/SSH	8.x	NOT SUPPORTED for NetWorker 9.0 and newer
GST	Backup	postgreSQL	9.x +	Deprecated, will be removed
daemon.log	Media	SMB/SSH	All	Deprecated, will be removed
daemon.raw	Media	SMB/SSH	All	Deprecated, will be removed

Firewall Ports

This contains only the additional requirements to support GST or Savegroup Log collection.

Service Port	Bocada Collection Type	NetWorker Version	Connection Method	NetWorker Data Source	Notes
22 (TCP)	Madia	All	SSH2 (Unix)	daemon.log	Deprecated
445 (TCP)	Media	All	SMB (Windows)	daemon.raw	Legacy
22 (TCP)	Backup	8.x	SSH2 (Unix)	savegrp.log	Deprecated Legacy
445 (TCP)	Баскир		SMB (Windows)	savegrp.iog	
5432 (TCP-UDP)	Backup	9.x	postgreSQL	GST Database	Deprecated Legacy

Deprecated Method: GST Database

We <u>hilghly recommend</u> selecting <u>Default: Jobquery</u> as the preferred collection method. Verify that the Jobquery method has been attempted and excalate any issues to engineering immediately.

Configuration Checlist

	Script	ed con	figurat	tion fo	or Win	dows	or	UNIX:
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		O Company of the comp
		Copy the appropriate script for either Windows or UNIX to the NetWorker server from the
		Bocada install directory:\Bocada\DataCollection\scripts
		Run script on the NetWorker server to create a GST Database user with access to the
		PostgreSQL database.
		Configure NetWorker plugin in Bocada to collect data from the NetWorker server
Manual	l co	onfiguration for Windows:
		Stop Services on the NetWorker server.
		Modify pg_hba.conf file to permit remote access to the database.
		Restart EMC GST database service.
		Create a user & password for database access.
		Modify pg_hba.conf file again to restrict access, if desired.
		Change Read permissions of the NETWORK group for the \nsr filesystem to 'Allow'.

☐ Restart services.

- ☐ Install the NetWorker Extended Client on the Bocada DCS.
- ☐ Complete steps in All Methods list below.

User creation and Setup on the NetWorker Server

Data is collected from the NetWorker GST database using a GST Database User with read-only access. This user must be created to provide access and can be done manually or by executing a Bocada-provided script. Both methods temporarily require administrator privileges on the NetWorker server.

These credentials are entered in the Bocada <u>server properties</u> above.

Method 1: Scripted

Bocada has provided user setup scripts for UNIX and Windows to create read-only users in a NetWorker GST database. The scripts can optionally create a superuser account if desired. These scripts may be found in your Bocada installation directory under \DataCollection\scripts (default location is C:\Program Files (x86)\Bocada\DataCollection\scripts).

The NetWorker and GST Database daemons must be running when using the Bocada setup script and the daemons will continue to operate without interruption while running the Bocada setup script.

UNIX Script Execution

To setup the script for use on a NetWorker Unix server, perform the following:

UNIX Script

NetWorker9-Unix-Setup.ksh

Setup

1. Copy script to a temporary directory such as "/tmp" on the NetWorker server.

- 2. Open a shell to the server as root or equivalent.
- 3. Navigate to the directory where the script is stored, e.g. "/tmp".
- 4. Change access permissions on the script so it can be executed, e.g.:

```
chmod 775 NetWorker9-Unix-Setup.ksh
```

5. Locate the directory containing the NetWorker GST Database.

```
Default: /nsr/nmc/nmcdb/pgdata
```

Help Menu

The latest help information for the script is available by issuing the following command:

```
./NetWorker9-Unix-Setup.ksh -help
```

Executing the script with no arguments will cause it to update the default location where GST Databases are stored and create a read-only user named "bocada".

Default Run Command

6. The following is an example of running the script using default settings:

```
$ ./NetWorker9-Unix-Setup.ksh
_____
Procedure start: Wed Dec 6 13:16:32 PST 2017
Using NetWorker GST database folder '/nsr/nmc/nmcdb/pqdata'.
Job name: 20171206_131632
Procedure parameters:
   arg_dbdir=/nsr/nmc/nmcdb/pgdata
  arg superuser=''
   arg user=bocada
   proc datetime='Wed Dec 6 13:16:32 PST 2017'
   proc jobname=20171206 131632
   proc_pgdir=/opt/lgtonmc/postgres/bin
   proc_port=5434
Creating read only user account 'bocada'.
in Postgres database in folder '/nsr/nmc/nmcdb/pgdata '.
Enter 'yes' to continue:
```

7. After you type "yes" and press enter, the script will perform the action specified: Creating the read-only database user account "bocada" in the specified GST database. The procedure will prompt you for the new account password, and then to verify the new account password.

Note on Password Confirmation

The password prompt is controlled by the native PostgreSQL engine, and if the password confirmation entry does not match the original password entered, the engine will create the specified user with *no* password. If this occurs, the script output is as follows and it is recommended to re-run the script for the same user again:

Example:

```
Creating read only user account 'bocada'.
```

GRANT

GRANT

GRANT

Enter new password:

Enter it again:

Passwords didn't match.

Read only user account 'bocada' created.

Windows Script Execution

To setup the script for use on a NetWorker Windows server, perform the following:

Windows Script

NetWorker9-Win-Setup.cmd

Setup

- 1. Copy script to a temporary directory such as "C:\temp" on the NetWorker server.
- 2. Open a command shell with administrator priviledges.
- 3. Navigate to the directory where you put the script, e.g. "C:\temp".
- 4. Locate the directory containing the NetWorker GST Database.

Default: C:\Program Files\EMC NetWorker\Management\nmcdb\pgdata

Help Menu

The latest help information for the script is available by issuing the following command:

```
.\NetWorker9-Win-Setup.cmd -help
```

Executing the script with no arguments will cause it to update the default location where GST Databases are stored and create a read-only user named "bocada".

Default Run Command

5. The following is an example of running the script using default settings:

```
$ .\NetWorker9-Win-Setup.cmd
______
Procedure start: Thu 12/14/2017 9:37:21.28
Using NetWorker GST database folder "D:\Temp\Management\nmcdb\pgdata".
Job name: 20171214 09372128
Procedure parameters:
   proc_cmd=C:\Temp\NetWorker9-Win-Setup.cmd
  proc date=Thu 12/14/2017
  proc dir=C:\Temp\
  proc job=NetWorker9-Win-Setup.cmd
   proc jobname=20171214 09372128
  proc logfilename=C:\Temp\NetWorker9-Win-Setup 20171214 09372128.log
   proc name=NetWorker9-Win-Setup
   proc time= 9:37:21.28
   arg dbdir=C:\Program Files\EMC NetWorker\Management\nmcdb\pgdata
   arg pgdir=C:\Program Files\EMC NetWorker\Management\nmcdb\pgdata
\..\..\GST\postgres\bin
   arg_user=bocada
Found GST Database port to be 5432
Found GST Database process ID to be 768
Creating read only user account "bocada".
in Postgres database in folder " C:\Program Files\EMC NetWorker\Management
\nmcdb\pgdata".
```

6. After you type "yes" and press enter, the script will perform the action specified: Creating the read-only user account "bocada" in the specified GST database. The procedure will prompt you for the new account password, and then to verify the new account password.

Note on Password Entry

Enter "yes" to continue:

PostgreSQL shows the password as you type in plain text. Take care that no unauthorized individuals are watching while you type the password, and be certain to enter the "cls" command to clear the command shell window when finished, or "exit" to close the window.

Method 2: Manual

The following manual steps may be used instead of the Bocada scripts to create a GST Database User and allow this user access to the GST Database. For more on NetWorker commands, reference the *EMC NetWorker Administration Guide*.

The user added will have superuser/administrator access to the NetWorker GST database. If a user with read-only permissions is desired, the above Bocada scripts in Method 1 must be run. However, the access granted to this superuser/administrator may still be limited to only a single server or network via the pg_hba.conf file.

UNIX/Linux NetWorker Server

Open a command shell to the UNIX or Linux NetWorker server and, as root or using the sudo command, perform the following steps. Note: the default NetWorker directories are used in the examples; adjust accordingly as needed if not using default locations.

1. Stop the NetWorker service:

/etc/init.d/networker stop

2. Stop the EMC GST Database service:

/opt/lgtonmc/postgres/bin/pg_ctl stop -w -D /nsr/nmc/nmcdb/pgdata

3. Change directories to NetWorker PostgreSQL location:

cd /nsr/nmc/nmcdb/pgdata

4. Copy pg_hba.conf to pg_hba_original.conf:

cp pg_hba.conf pg_hba_original.conf

5. Add the following line as the **first**¹ entry in the configuration section of pg_hba.conf, and save it:

host	t all	all	samehost	trust		
# TYPE #local # TPv4	DATABASE all local con		USER lgtogst	ī.	ADDRESS 127.0.0.1/32	METHOD md5
host	all		all		samehost	trust
host	all		lgtogst	t	127.0.0.1/32	md5
host	all		lgtogst	t	samehost	md5
host	replicat	ion	lgtogst	t	127.0.0.1/32	md5
host	replicat	ion	lgtogst	t	samehost	md5
hostssl	lgto_gst		lgtogst	tr	all	md5
# IPv6	local con	necti	ons:			
host	all		lgtogst	t	::1/128	md5
host	replicat	ion	lgtogst	t	::1/128	md5
host	all		lgtogst	tr	::1/128	md5

6. Start the EMC GST Database service:

/opt/lgtonmc/postgres/bin/pg_ctl start -w -D /nsr/nmc/nmcdb/pgdat

7. Create the Bocada GST Database User and password using the following command:

```
/opt/lgtonmc/postgres/bin/createuser -p <port> -h <host ip> -U lgtogst -P -s <user
name>
```

Note: In this step, you will be asked to "Enter password for new role", and then "Enter it again" (see screenshot below). If the system asks for a password after you enter it the second time,

¹ Since the pg_hba.conf records are examined sequentially for each connection attempt, the order of the records is significant, and this must be the first non-comment line in the file. Reference: https://www.postgresql.org/docs/9.3/static/auth-pg-hba-conf.html

there is an error; review Steps 1 through 6. Possible reasons for this are that the new entry in the pg_hba.conf is incorrect, or that the EMC GST Database Service has not been cycled.

8. Stop the EMC GST Database Service again:

/opt/lgtonmc/postgres/bin/pg_ctl stop -w -D /nsr/nmc/nmcdb/pgdat

9. Update the first entry added to the *pg_hba.conf* (in step 5, above) to be the following; choose a more restrictive address if desired:

Host all <new user name> samenet md5

Notes:

- The <u>username must be all lower case</u>. No capital letters may be used.
- Note: 'samenet' may be used when the Bocada server and NetWorker server are in the same subnet. If the NetWorker server is on a separate subnet than the Data Collection Server, this may be set to 'all'
- As above, you will be asked to "Enter password for new role", and then "Enter it again" (see screenshot below). If the system asks for a password after you enter it the second time, there is an error; Review Steps 1 through 6; Possible reasons for this are that the new entry in the pg_hba.conf is incorrect, or that the EMC GST Database Service has not been cycled.

# TYPE	DATABASE	USER	ADDRESS	METHOD
#local	all	lgtogst	127.0.0.1/32	md5
# TPv4	local connection	15:		
host	all	bocada	samenet	md5
host	all	lgtogst	127.0.0.1/32	md5
host	all	lgtogst	samehost	md5
host	replication	lgtogst	127.0.0.1/32	md5
host	replication	lgtogst	samehost	md5
hostssl	lgto_gst	lgtogstr	all	md5
# IPv6	local connection	is:		
host	all	lgtogst	::1/128	md5
host	replication	lgtogst	::1/128	md5
host	all	lgtogstr	::1/128	md5

10. Start NetWorker service:

#/etc/init.d/networker start

11. Start the EMC GST Database service:

/opt/lgtonmc/postgres/bin/pg_ctl start -w -D /nsr/nmc/nmcdb/pgdat

Windows NetWorker Server

- 1. Stop NetWorker services on the NetWorker server.
- 2. Stop the EMC GST Database Service.
- 3. Navigate to <NetWorkerInstall_Dir>\ Management\nmcdb\pgdata
- 4. Create a copy of pg_hba.conf named pg_hba_original.conf
- 5. Add the following line as the **first**² entry in the Configuration Section of the *pg_hba.conf*

•	host	all	all	samehost	trust		
# TYPE #local # TPv4	all	ABASE		USER lgtogst		ADDRESS 127.0.0.1/32	METHOD md5
host	all			all		samehost	trust
host	all			lgtogst		127.0.0.1/32	md5
host	all			lgtogst		samehost	md5
host	rep:	licat	ion	lgtogst		127.0.0.1/32	md5
host	rep.	licat	ion	lgtogst		samehost	md5
hostssl	lgto	_gst		lgtogstr		all	md5
# IPv6	local	l con	necti	ons:			
host	all			lgtogst		::1/128	md5
host	rep:	licat	ion	lgtogst		::1/128	md5
host	all			lgtogstr		::1/128	md5

- 6. Start only the EMC GST Database Service
- 7. Create the Bocada GST Database User and password using the following command:

```
<NetWorkerInstall_Dir>\Management\GST\postgress\bin\createuser.exe -p <port> -h
<host ip> -U lgtogst -P -s <user name>
```

Notes:

- The <u>username must be all lower case</u>. No capital letters may be used.
- As above, you will be asked to "Enter password for new role", and then "Enter it again" (see screenshot below). If the system asks for a password after you enter it the second time, there is an error; Review Steps 1 through 6; Possible reasons for this are that the new entry in the pg_hba.conf is incorrect, or that the EMC GST Database Service has not been cycled.

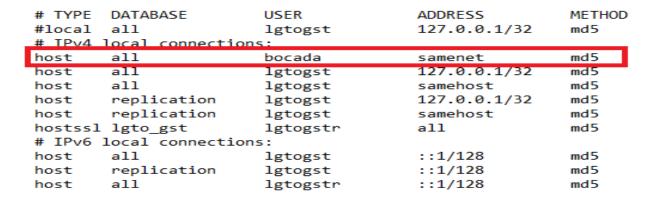
C:\Program Files\EMC NetWorker\Management\GST\postgres\bin>createuser.exe -p 5432 -h 192.168.1.12-U lgtogst -P -s bocada Enter password for new role: Enter it again:

- 8. Stop the EMC GST Database Service again.
- 9. Update the first entry added to the pq hba.conf in step 5, above to be the following:

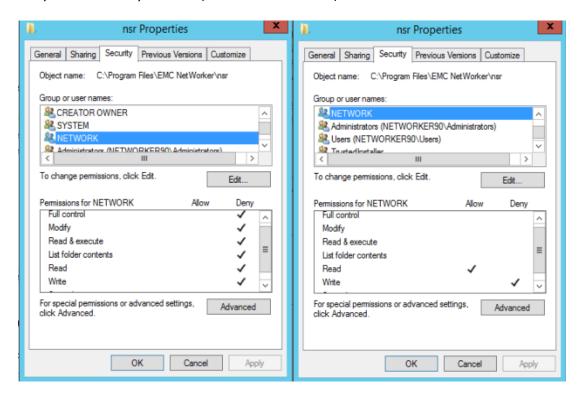
```
Host all <new user name> samenet md5
```

 Note: 'samenet' may be used when the Bocada server and NetWorker server are in the same subnet. If the NetWorker server is on a separate subnet than the Data Collection Server, this may be set to 'all'.

² Since the pg_hba.conf records are examined sequentially for each connection attempt, the order of the records is significant, and this must be the first non-comment line in the file. Reference: https://www.postgresql.org/docs/9.3/static/auth-pg-hba-conf.html



10. Change the *Read* permissions of the NETWORK Group for the <NetWorkerInstall_Dir>\nsr filesystem from *Deny* to *Allow* (see screenshot below):



- 11. Restart All NetWorker Services.
- 12. Restart All EMC GST Services.

Note: More information on the PostgreSQL can be found on the following link: https://www.postgresql.org/docs/9.2/static/auth-pg-hba-conf.html

Server Properties

NetWorker Version: 9.x GST Database

Forces plugin to collect data against NetWorker 9.x using the GST database. This option is same as the *Default*, but can be useful if the plugin ever experiences an issue with NetWorker version recognition.

GST database user name/password

If directed by Bocada Support to set the *Version* property to *9.x GST Database*, enter the <u>user created on the NetWorker server</u> to collect backup data.

Specialized GST Configuration (Advanced Properties)

The default NetWorker installation uses itself as the GST database repository. The following is used when a dedicated NetWorker Management Console server is configured to run a single GST database for multiple NetWorker servers.



NMC GST Host server

This defaults to the name of your NetWorker server when using the GST database collection method.

GST database name

For NetWorker 9.x; defaults to *lgto_gst*

GST database port

For NetWorker 9.x; defaults to 5432

NetWorker server name (in GST)

Used if your NetWorker server name (as known to itself) is different from the name of the NetWorker Server as added to Bocada.

Legacy Collection (8.x and earlier)

Note: Configuration and automatic creation of the savegroup.log was deprecated by EMC with NetWorker version 9.0. All Bocada servers using this method of collection should be updated to use the Jobquery method.

Enable savegrp.log

This is only applicable to NetWorker version 8.x and older Backup Servers. Use the following steps to verify that the savegrp.log is created by the NetWorker server and available.

Windows

- 1. Start the NetWorker Administrator.
- 2. Select the appropriate NetWorker server.
- 3. Select the Configure tab.
- 4. Click Server Notifications.
- 5. Verify that a notification (e.g. Savegroup completion) is available with the following minimum configuration:
 - Event: Savegroup
 - Priority: Alert and Notice
 - Action: Write log output to file, e.g.:
 nsrlog –f "D:\Program files\EMC NetWorker\nsr\logs\savegrp.log

IINIX

In UNIX, the Savegroup Completion notification is set to send email, rather than writing the results to savegrp.log. Because of this, a new notification (that writes Savegroup Completion notices to file) needs to be created. Perform the following steps on the NetWorker server to create the savegrp.log file:

- 1. On the NetWorker server, start nwadmin.
- 2. Select Customize Notifications from the nwadmin menu bar.
- 3. Select *View* and *Details* from the Notification window to display detailed information.
- 4. Select the *Create* button in the Notification window to create a new notification.
- 5. Enter Savegroup notification log in the name field.
- 6. Type "/usr/bin/cat >> /nsr/logs/savegrp.log" (without quotes) in the Action field.
- 7. Select *savegroup* from the Event field.
- 8. Select *Apply*.

Note: The NetWorker server does not prune the savegrp.log. To keep the savegrp.log file a manageable size it may be necessary to rename the existing log. Before attempting to rename the log, ensure that no NetWorker Groups are running.

Save Group Log Path

This setting is only required when collecting data using the <u>Legacy method</u> and is not recommended unless directed by Bocada Support.

The EMC installer may protect these installation directories from SMB access. If that is the case, sharing may need to be set explicitly for the files specified in this parameter.

Date Format

Identifies the cultural date format for dates in the Save Group Log file which have the form "number/number/number".

Advanced Server Properties

The following properties are found in Advanced Properties wieh editing or adding a NetWorker server to Bocada. These have been broken into logical sections in this document for clarity but are combined in the actual interface.



Backup job data

This advanced setting gives the option to add on MMINFO data to jobs collected with backup collection methods, like saveset-id, media target destinations for each job, etc. While we continue to enhance the new jobquery.exe collection method this can behave differently dependent on the earlier properties:

Important: mminfo only, no backup failures is NOT RECOMMENDED as it only captures successful backups that have written to media.

<u>Jobquery.exe</u>: Currently this setting is ignored and the mminfo data is not merged with the jobquery output data. This will be added in an upcoming release.

<u>GST database and Savegroup</u>: This will merge media information with the backup data when set to *Default: all backup data*. With these methods, some successful jovs will be missed when set to *no mminfo / media*.

Note: While all mminfo entries are reported once found, these may display only "MMINFO<sid>" in the description until matched with completed Savegrp.log or GST database entries.

Selected Additional Advanced Properties (Bocada Support Only)

Update Type

The property should remain set to *Default: current* unless otherwise directed by Bocada Support for troubleshooting purposes.

Daemon Log Path

This plugin property is only used if the server property "Update Type" is set to *Deprecated Legacy* which is not recommended unless directed by Bocada Support. Use this setting to provide the path to the location of daemon log files on the NetWorker server. Choose *default* or enter a path:

- If the log access method property is SMB, default path is: C\$\Program Files\Legato\nsr\logs
- If the log access method property is SSH, default path is: /nsr/logs
- If the log access method property is local, default path is C:\Program Files\Legato\nsr\logs

Capture Source Data

Note: Used to capture the process of data collection. The default *no* setting should be used unless otherwise directed by Bocada Support for troubleshooting purposes.

Appendix A: Public/Private Key (SSH)

Note: These steps are only needed if the log files cannot be reached via standard user / password authentication.

The process of using a public/private key with Bocada is a two-step process. Step one is to generate the public/private key. Step two is to use the Bocada broneline.exe utility to modify the key pair into a format compatible with Bocada. The broneline.exe utility transforms a public/private RSA key pair into a single line of text.

We recommend using Cygwin to generate a public/private key so this document uses ssh-keygen.exe as its example. Consult the appropriate software documentation for more information.

Generate a Public/Private Key

- 1. Install a SSH2 client on the Bocada Data Collection Server.
- 2. Create a folder called ssh in a local directory path on the Data Collection Server
- 3. Open a command prompt and use the following cygwin command:

ssh-keygen -t rsa -f [local_directory_path]\ssh\[key_file_name]

4. When prompted, enter and re-enter the passphrase for the key pair.

The full command is: ssh-keygen[-ceilpqyB] [-t type] [-b bits] [-f file] [-C comment] [-N new-pass] [-P pass]

Where:

- -t = type (format) of key (RSA is the recommended format).
- -f = file name (or path and file name) for the private key.

Modify Key

Modify the key just created with broneline.exe:

- 1. Open a command prompt and change directory to the location of the public/private key.
- 2. Enter the command:

[bocada install dir]\Bocada\DataCollection\bin\broneline.exe [key file name] > output

- 3. Open the resulting output file in a text editor.
- 4. Copy and paste the contents into the user name and password fields for the server properties in Add/Edit Server wizard for the server.

Troubleshooting

Failed to open 'savegrp.log' file:

Should you experience this error:

Error 545: ApplicationException: Failed to open 'savegrp.log' file, last message: Failed to create file system entry. Check debug log for details.

If the NetWorker server is Windows, follow these steps:

- 1. Log in to the NetWorker server as the User account listed in the Bocada Server settings.
- 2. Use File Explorer onto the NetWorker server to verify the location of Savegrp.log (default is \nsr\logs, but your installation location may vary)
- 3. Verify that the user account can open the savegrp.log file.

If the NetWorker server is Unix, then follow these steps:

- 1. Verify Savegrp.log location on the NetWorker server (default is /nsr/logs)
- 2. Verify Bocada Edit Server setting matches the Savegrp.log file location that is on the NetWorker server
- Install PuTTY (a free SSH and Telnet client), available from https://putty.org/
- 4. PuTTY to the backup server, with the user credentials entered in the Bocada server properties for that server.
- 5. cd to the log directory
- 6. List the files to verify it's there, e.g. ls -1
- 7. Open the file, e.g. less savegrp.log
- 8. Print the dir (pwd), highlight, and copy the result
- 9. Paste the result into the Bocada property for "save group log path".

Failed to launch mminfo.exe

Should you experience this error:

Error 545: ApplicationException: Failed to launch mminfo.exe

- 1. Verify that the NetWorker Extended Client is installed on the Bocada Data Collection Server. If not, install the Extended Client and try again.
- 2. Try running the MMINFO command on the Bocada Data Collection server: Open a command prompt on the Bocada DCS and run the following command (filling in the name of the NetWorker server):

```
mminfo -s <NetWorker backup server> -v
```

If the MMINFO command is encountering problems, it may return something like the following: mminfo: no matches found for the query

This message can indicate that there are no (zero) backups in the NetWorker server (this can occur if the backup volumes contain no backups) or that the mminfo command failed because of a DNS lookup failure.

To debug the MMINFO command, run the command with the -D1 flag:

```
mminfo -s <NetWorker backup server> -v -D1
```

If there are issues with DNS, this command will likely return errors such as "Host name verification failed – unknown host" or similar.

3. Try running the MMINFO command on the NetWorker server: On the NetWorker server, open a command prompt and run the same command (again, filling in the correct name for the NetWorker server):

```
mminfo -s <NetWorker backup server> -v
```

If this still returns no results, then there are no backup jobs to be found in the media database.

If this returns an error, then the issue is on the NetWorker server – please work with your NetWorker admin to resolve.

4. If the MMINFO command is successful on the NetWorker server but fails from the Bocada DCS, check network connectivity and name resolution (using ping -a and nslookup, with both the IP address and FQDN) from the DCS to the NetWorker server, then perform the same checks from the NetWorker server to the DCS.

Technical Support

For technical support or a copy of our standard support agreement, please contact us.

E-mail: <u>support@bocada.com</u>

Support Portal: https://bocada-support.force.com/

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Protected by U.S patents 6,640,217; 6,708,188; 6,745,210; 7,457,833; 7,469,269; 7,496,614; 8,407,227

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