# ME Cluster™ – Remote Distribution Server

## "Cast Study 1"


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**Worldwide Technical Support and Product Information**

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For further support information, see the *Technical Support Resources* appendix.
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# Important Information

## Copyright



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# RDS Supercomputer Cluster

## *(Build your supercomputer system in 10 minutes)*

**Subject:**

Password Recovery for a ZIP password file (protected by 5 passwords), using 10 PCs.

**Hardware (10 PCs):**

CPU: Pentium 566 MHz

Memory:384 MB RAM

OS: Windows XP

**Other software package from 3rd party:**

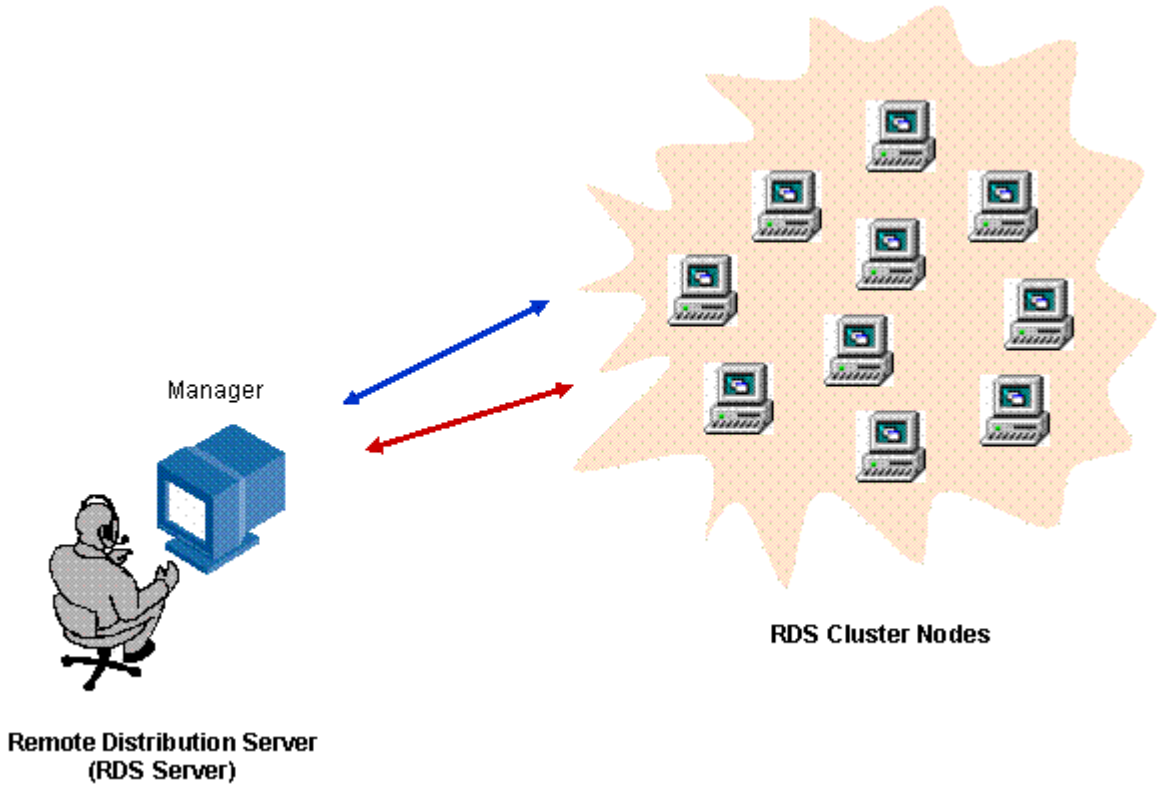
Password Recovery Software, AZPR from ElcomSoft Co.Ltd. (Shareware version, test only).

**TCP/IP:**

Manager: 192.168.0.2

Client Nodes: 192.168.0.3, ~ 192.168.0.12

**Figure 1** Plan your system TCP/IP connection for Remote Distribution Server - Supercomputer.




Node: AZPR are trademarks of ElcomSoft Co.Ltd. http://www.elcomsoft.com/azpr.html

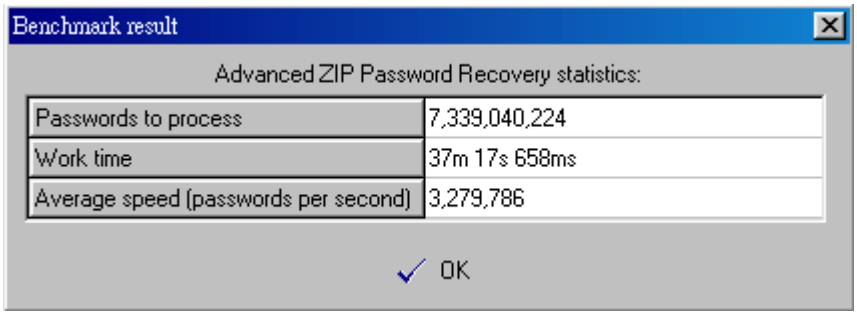
# Step 2 – Analysis

### *Before using RDS*

One PC to solve a 5-password protected ZIP file:

**Figure 2** Use a single PC to solve a 5-password protected ZIP file

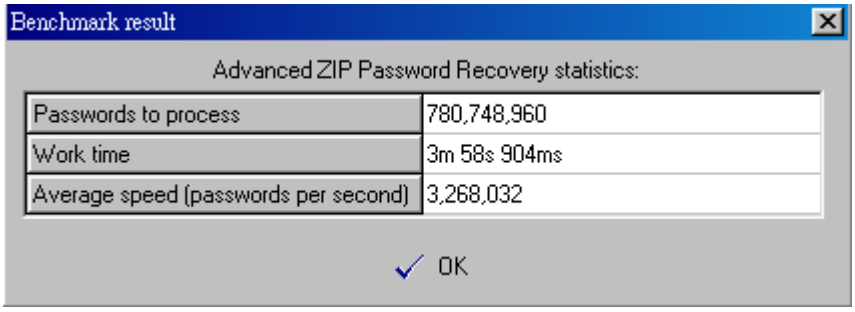
**Figure 3** One PC will use 37 minutes 17 seconds and 658 ms to check all possible password combinations.




### *After using RDS*

10 PCs to solve a 5-password protected ZIP file:

**Figure 4** For each PC, it will use 3 minutes 58 seconds, and 904 ms to check.




### *Remote Distribution Server is a powerful tool to build supercomputer system*

ME Cluster – Remote Distribution Server reduces the total cost of network management in the environment and is the effective remote distribution solution for everyone's applications.

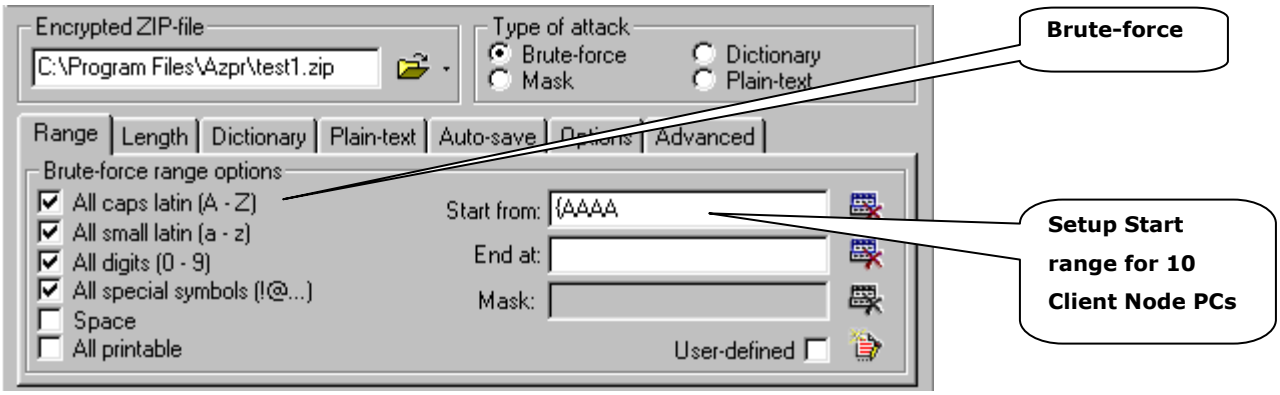
**Zip file:**

Prepare a tested ZIP file “Test1.zip” and set 5-passwords to any number you like.

**Manager Parameter Setup**

- Design parameter script and use AZPR Command Line to start AZPR at Client Node.
- Set AZPR attack type by Brute-force.

**Figure 5** Setup of AZPR.




AZPR with command-line parameters. The syntax is: AZPR [switches] [zip-filename]

| | | |
|---|---|---|
| /a:b\|m\|d\|p | attack type (brute-force, mask, dictionary, plaintext) | brute-force |
| /c:csdepa | character set (caps, small, digits, special, space, all) | caps |
| /sf:pass | start from password | |
| /min:N | minimum password length | 5 |
| /max:N | maximum password length | 5 |

/smartexit[:filename] When the attack is completed, write all statistics, including the password (if found) to the given file, and close the program.

Examples: azpr.exe /a:b /c:csde /min:5 /max:5 /sf:AAAAA /smartexit:Result1.txt test1.zip

the AZPR program verifies the passwords according to the following character order:

- CAPITAL letters: 'A'..'Z'
- the space
- small letters: 'a'..'z')
- digits: '0'..'9'
- special characters: !@#$%^&*()_+-=<>,./?[]{}~:;`'|"\

To distribute the parameter script command for 10 PCs, we split the whole password range onto 10 parts.

**Password Start Range :**

| Client Node Name | TCP/IP | Password Start Range |
|---|---|---|
| Computer #1 | 192.168.0.3 | AAAAA, AAAAB, AAAAC,….J\\\\ etc. |
| Computer #2 | 192.168.0.4 | KAAAA, KAAAB, KAAAC,… S\\\\ etc. |
| Computer #3 | 192.168.0.5 | TAAAA, … etc. |
| Computer #4 | 192.168.0.6 | dAAAA, … etc. |
| Computer #5 | 192.168.0.7 | mAAAA, … etc. |
| Computer #6 | 192.168.0.8 | vAAAA, … etc. |
| Computer #7 | 192.168.0.9 | 5AAAA, … etc. |
| Computer #8 | 192.168.0.10 | %AAAA, … etc. |
| Computer #9 | 192.168.0.11 | <AAAA, … etc. |
| Computer #10 | 192.168.0.12 | {AAAA, … etc. |

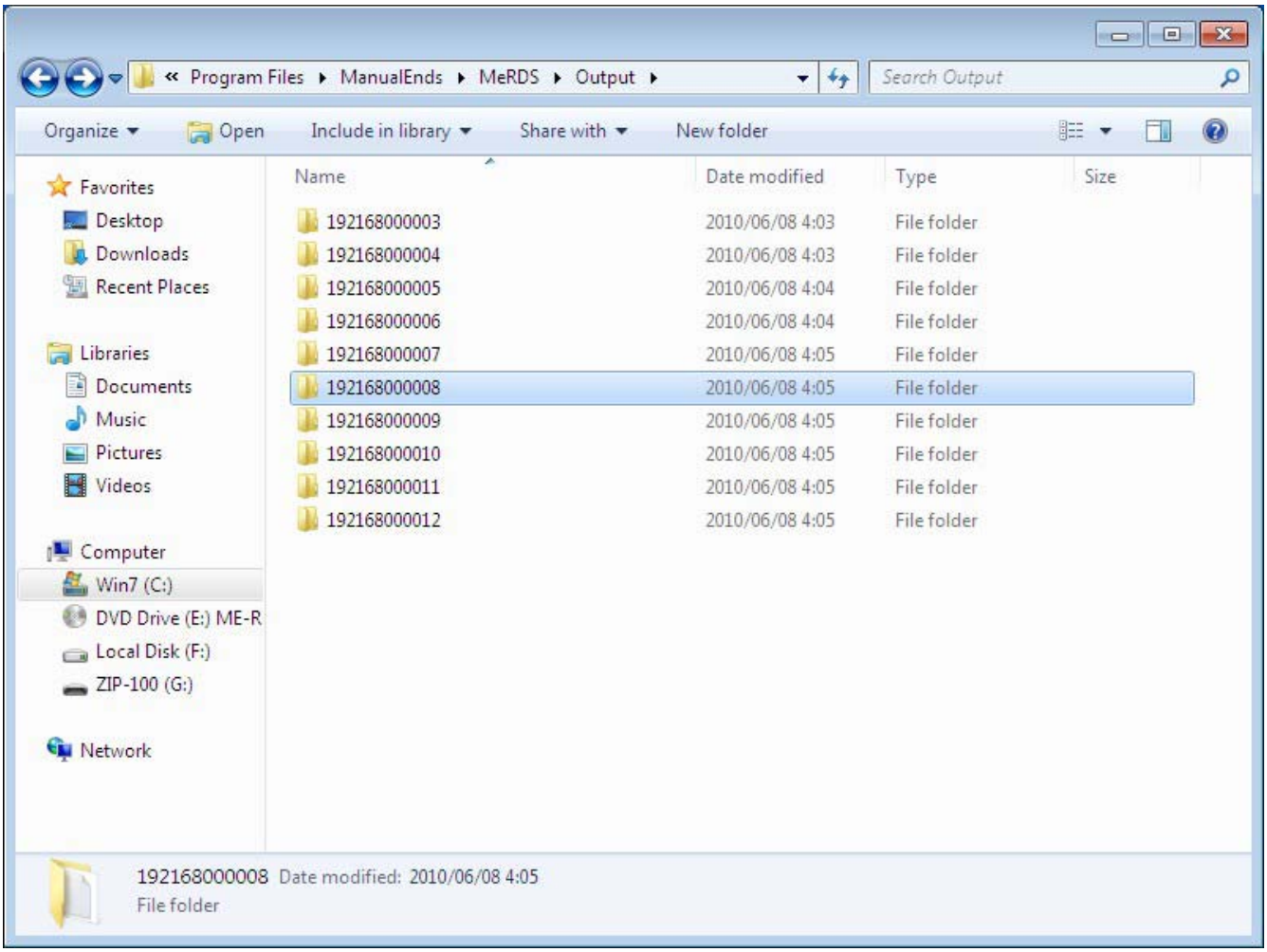
**Command Line :**

| Client Node Name | Command Line |
|---|---|
| Computer #1 | azpr.exe /a:b /c:csde /min:5 /max:5 /sf:AAAAA /smartexit:Result1.txt test1.zip |
| Computer #2 | azpr.exe /a:b /c:csde /min:5 /max:5 /sf:KAAAA /smartexit:Result2.txt test1.zip |
| Computer #3 | azpr.exe /a:b /c:csde /min:5 /max:5 /sf:TAAAA /smartexit:Result3.txt test1.zip |
| Computer #4 | azpr.exe /a:b /c:csde /min:5 /max:5 /sf:dAAAA /smartexit:Result4.txt test1.zip |
| Computer #5 | azpr.exe /a:b /c:csde /min:5 /max:5 /sf:mAAAA /smartexit:Result5.txt test1.zip |
| Computer #6 | azpr.exe /a:b /c:csde /min:5 /max:5 /sf:vAAAA /smartexit:Result6.txt test1.zip |
| Computer #7 | azpr.exe /a:b /c:csde /min:5 /max:5 /sf:5AAAA /smartexit:Result7.txt test1.zip |
| Computer #8 | azpr.exe /a:b /c:csde /min:5 /max:5 /sf:%AAAA /smartexit:Result8.txt test1.zip |
| Computer #9 | azpr.exe /a:b /c:csde /min:5 /max:5 /sf:<AAAA /smartexit:Result9.txt test1.zip |
| Computer #10 | azpr.exe /a:b /c:csde /min:5 /max:5 /sf:{AAAA /smartexit:Result10.txt test1.zip |

## Output Results

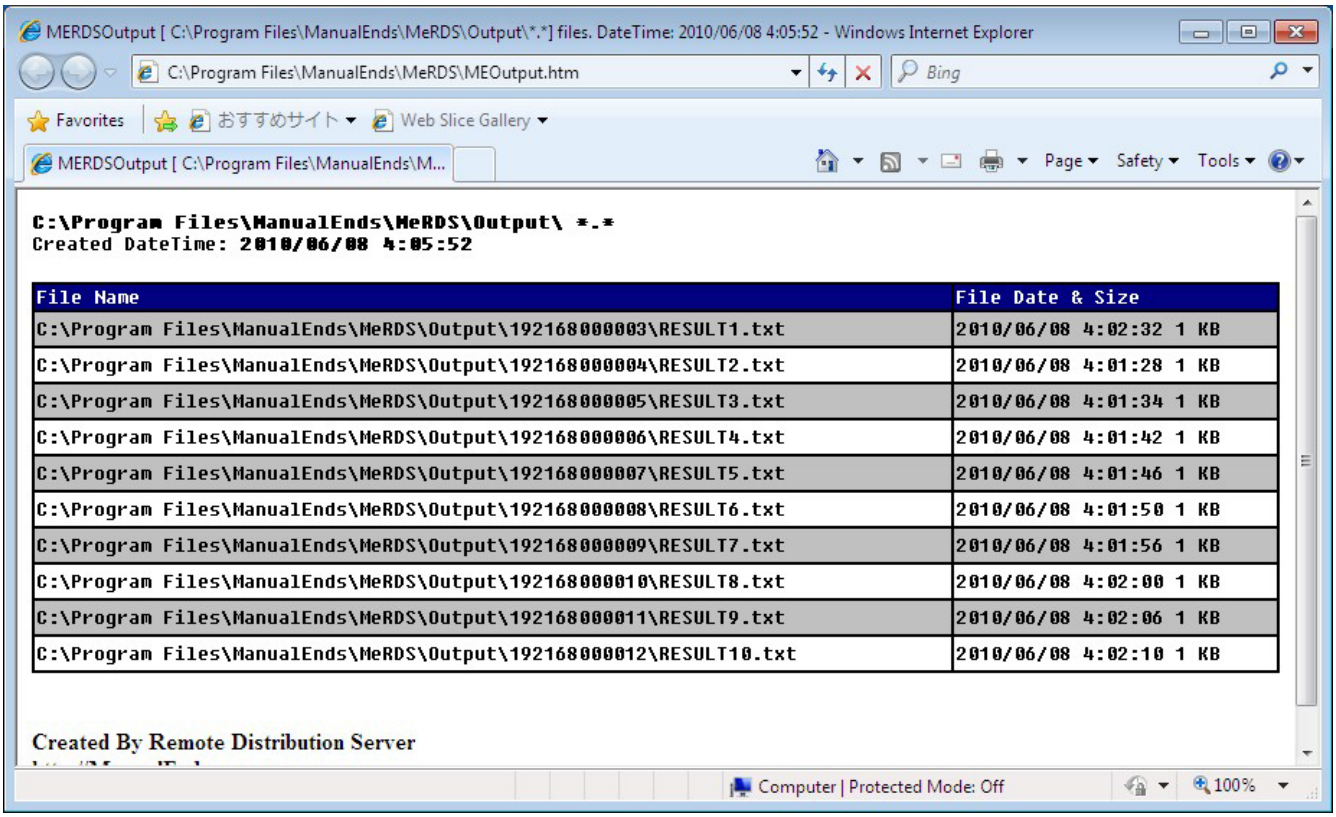
Output Results will save to your MeRDS path of subdirectory (**/Output/**) with the Client Node TCP/IP digit number.

**Figure 6** The Output Folders.




Client Node TCP/IP 192.168.0.3 : /Output/192168000003/
Client Node TCP/IP 192.168.0.4 : /Output/192168000004/
Client Node TCP/IP 192.168.0.5 : /Output/192168000005/
Client Node TCP/IP 192.168.0.6 : /Output/192168000006/
Client Node TCP/IP 192.168.0.7 : /Output/192168000007/
Client Node TCP/IP 192.168.0.8 : /Output/192168000008/
Client Node TCP/IP 192.168.0.9 : /Output/192168000009/
Client Node TCP/IP 192.168.0.10 : /Output/192168000010/
Client Node TCP/IP 192.168.0.11 : /Output/192168000011/
Client Node TCP/IP 192.168.0.12 : /Output/192168000012/
Client Node TCP/IP 192.168.0.13 : /Output/192168000013/

**Figure 7** Web browser monitor result.



**Final Result**

**Figure 8** The Output Folder of Computer #6, TCP/IP 192.168.0.8.

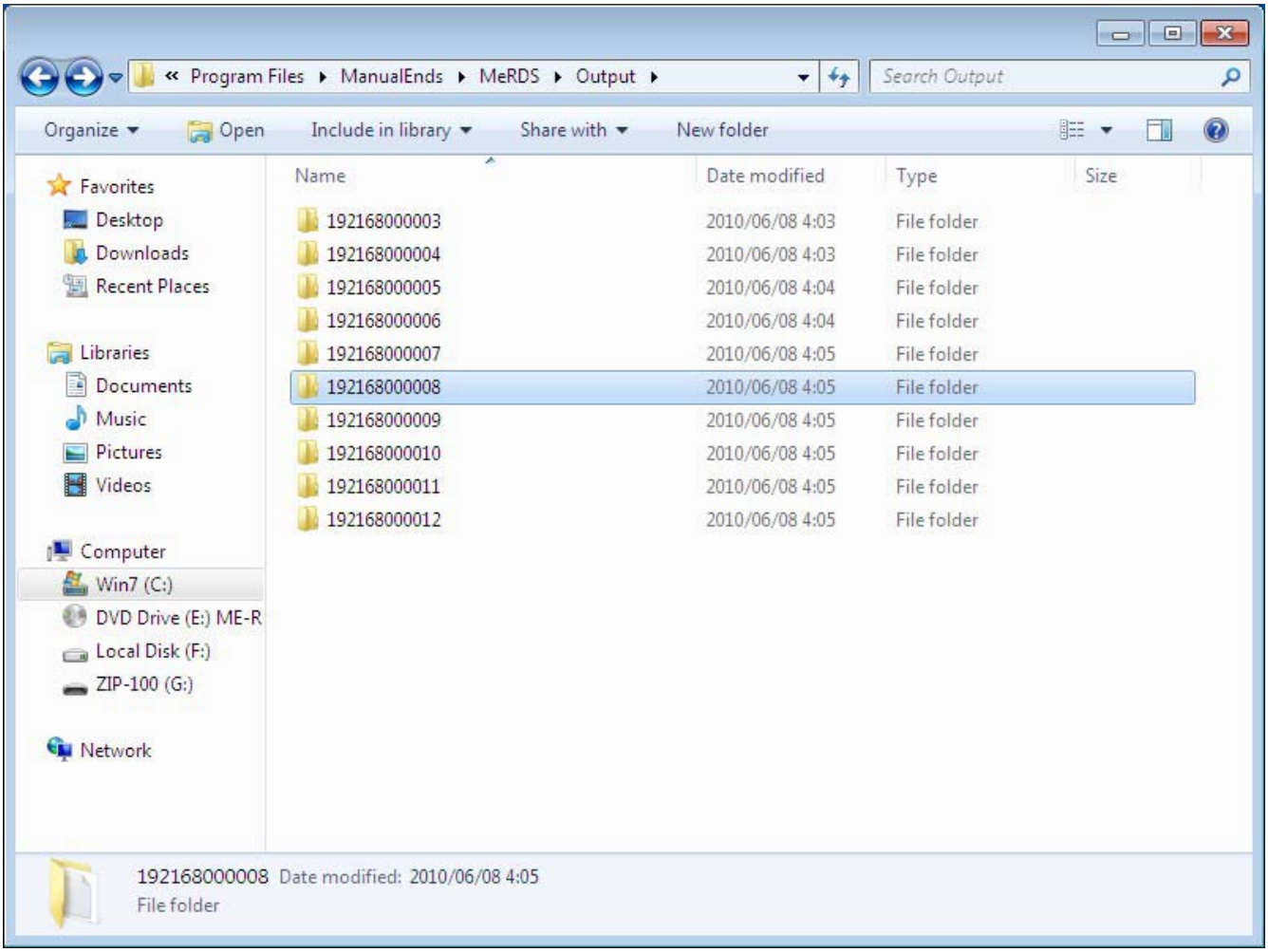


**Figure 9** The Computer #6, TCP/IP 192.168.0.8 Folder Result file.

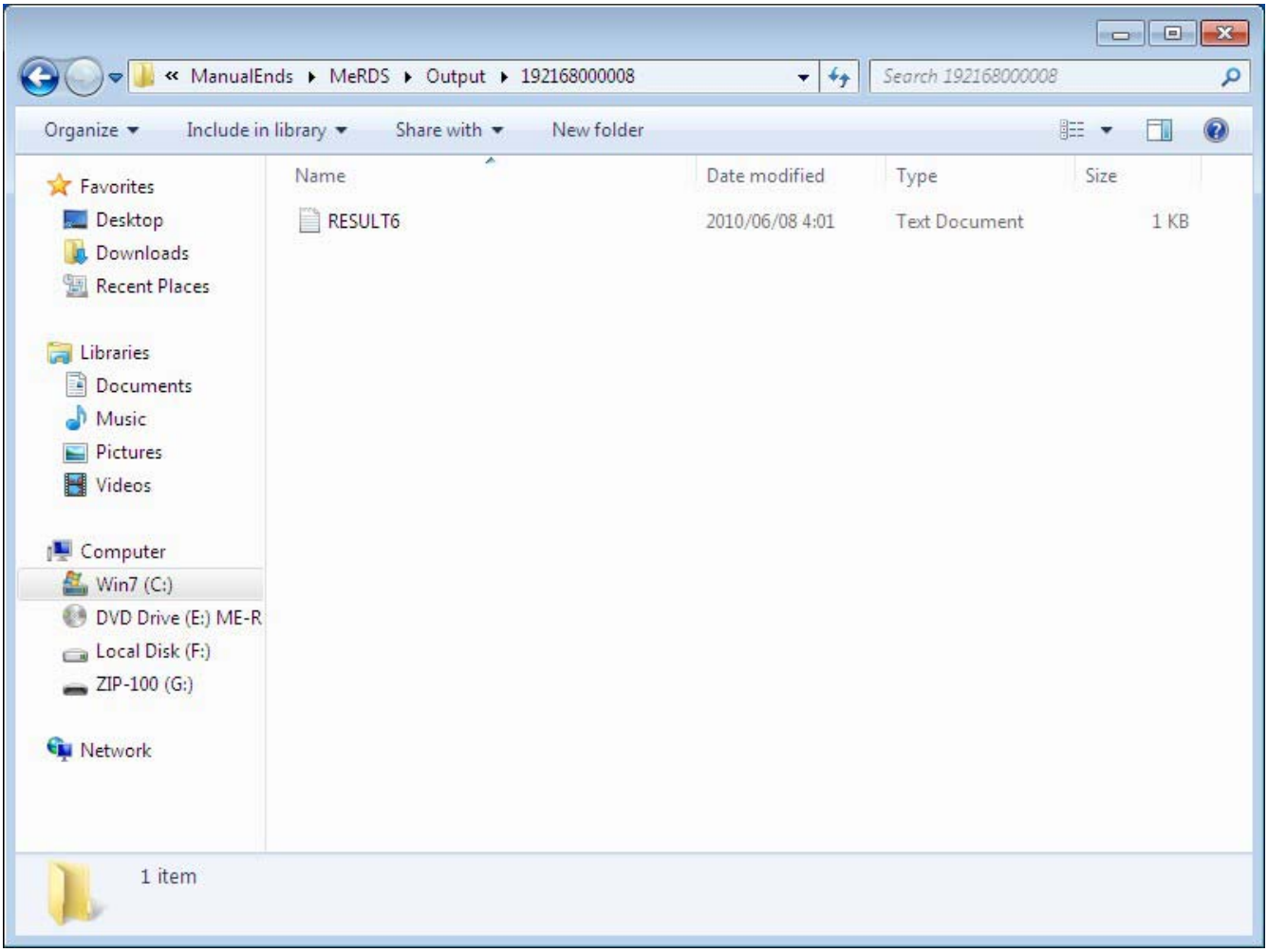


**Figure 10** The Output Result file of Computer #6, TCP/IP 192.168.0.8.