

## Step by Step instructions Setting up MRTG Version 2.9.21 on Windows 2000 Professional

MRTG which stands for Multi Router Traffic Grpaher which is used to generate traffic graphs for Network Connections without need of a physical router. The following setup has been tested with a Microsoft NT Based 2000 operating system.

If you can successfully run & install MRTG on your system other than this Windows version (Certainly should be on NT platform- like Windows XP or Windows 2003).please email at [rumi@tweenpath.com](mailto:rumi@tweenpath.com).

### Software Prerequisite:

1. Active State Perl [<http://www.activestate.com/>]
2. MRTG [<http://tweenpath.tripod.com/mrtg/mrtg-2.9.21.zip>]

### System Prerequisite:

1. Windows NT Platform (here tested with windows 2000 Professional version)
2. Management & monitoring tools > SNMP Simple Network Management Protocol installed

## INSTALLING & TESTING ACTIVE STATE PERL

*If you are already familiar with Perl setup, then can skip this whole procedure.*

Perl Binaries can be downloaded as a single file as Active State Perl. & the default setup location is **c:\perl** The main Perl executable is located at **c:\perl\bin\perl.exe**

After installing, you can test your Perl by serving the following command line in the DOS command console-

### ECHO PRINT "Hello World" | PERL

If it returns with a line with the quoted sentence **Hello World**, your Perl Installation is successful.

## SETTING UP MRTG

Download MRTG 2.9.21 & extract it. After extracting rename the Directory to **"mrtg"** & copy the folder to **C:\MRTG**

The structure will be like-

```
c:\mrtg-
|- bin
|- contrib.
|- doc
|- images
|- lib
|- src
|- translate
```

## EDITING FILES INSIDE BIN DIRECTORY

Open the following files (without file extensions) with notepad-

**cfgmaker**  
**indexmaker**  
**mrtg**

Change the top head line from `#!/usr/bin/perl` to `#! c:/perl/bin/perl` of each file.

**Important #!** (Shebang) this is important to run & execute perl scripts.

## **CONFIGURING SNMP**

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Before configuring MRTG, you have to make sure that SNMP is properly installed. To check whether it's installed follow the steps.

1. **Start > Settings > Control Panel > Add Remove Programs > Add/Remove Windows Components**

You have to have installed this SNMP; otherwise you can forget using MRTG. Now follow the following steps-

1. Copy the following code & save it as **uptime.pl** in **c:\mrtg\lib\mrtg2\**

```
use BER;
use SNMP_Session;
# Return the uptime of the localhost to test SNMP
$host = "localhost";
$community = "public";
$oid = encode_oid(1,3,6,1,2,1,1,3,0); # Uptime
$session = SNMP_Session->open ($host, $community, 161)
    || die "Can't open SNMP session to localhost";
$session->get_request_response ($oid);
($bindings) = $session->decode_get_response ($session->{pdu_buffer});
($binding,$bindings) = &decode_sequence ($bindings);
($oid,$value) = &decode_by_template ($binding, "%O%@");
print &pretty_print($oid)," => ", &pretty_print ($value), "\n";
```

Run it in command prompt:

```
CD \MRTG\LIB\MRTG2
PERL UPTIME.PL
```

It should display the uptime of your machine. If it does NOT work, you may not have SNMP properly installed on your Windows machine.

Here in this example we are going to implement the MRTG to work with the OS's built in performance logging tool.

## **LOGGING DATA WITH PERFORMANCE MONITOR**

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In the following section the performance logging data will be recorded-

1. Go to **Start > Settings > Control Panel > Administrative Tool**
2. Click on **"Performance"**. A new window will be opened. On it's left panel Right Click over **"Counter Logs" > New Log Settings**
3. Enter the Name of the server. If you don't know the name your server, then you can find that out by Right Clicking on **"My Computer" > properties > Network Identification**: there you will get the full Computer Name which is also you server name.
4. Here in my Tutorial, The name of the server is **"daakghar"**
5. After entering the server name you'll get a window
6. In **"General"** Tab click **ADD**
  - a. Simply add & select you Counter you would like to monitor. After adding, close it.

- b. Change the **Sample Data Interval** to **5 Minutes**
  7. In **"Log"** Tab perform the following task-
    - a. **UNCHECK** the box **"End File Names With"**
    - b. Select log file type **"Text File-CSV"**
  8. Select the **"Schedule"** Tab & perform the following-
    - a. In the **"Stop Log"** section- select "After 1 Day"
    - b. In the log File closes dialogue **CHECK "Start a New Log File"**

## **SETTING UP MRTG CONFIGURATION FILE**

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Copy the following code & save as **mkcfg.pl** & save it **c:\mrtg\bin\mkcfg.pl**

```
# mkcfg.pl
# Input: Windows 2000 Performance monitor log file (must be CSV format)
# Output: mrtg config file

$STUFF=@ARGV[0];
open STUFF or die "Cannot open $STUFF for read :$!";
@entries = <STUFF>;
#get first line of log file
@details=split /,/, @entries[0];
#extract servername
$servername = substr @details[1],3,(index @details[1],"\\",3)-3;
#print workdir entry
print "Workdir: \\mrtg\\logs\\$servername\n\n";
#get last line of log file
@lastline=split /,/, @entries[$#entries];
# get number of entries
$last=$#details;
$index=0;
for $entry (@details)
{
    if ($entry =~ /PDH-CSV 4.0/i)
    {
        next;
    }
    $index++;
    $entry=~ tr/"//d;
    chomp ($entry);
    print "Title[$servername -$index]: $entry\n";
    print "Pagetop[$servername -$index]: <H1>$entry</H1>\n";
    print "MaxBytes[$servername -$index]: 100\n";
    print "Options[$servername -$index]: gauge, nopercen\n";
    print "Target[$servername -$index]: `perl getlog.pl c:\\perflogs\\$servername.csv
\\$entry` \n";
    print "YLegend[$servername -$index]: Legend\n";
    print "ShortLegend[$servername -$index]:\n";
    print "LegendO[$servername -$index]:\n";
    print "LegendI[$servername -$index]:\n";
    print "Legend2[$servername -$index]:\n";
    print "Legend1[$servername -$index]:\n\n";
}
}
```

Execute the following command in the command prompt

```
C:  
CD \MRTG\BIN  
C:\MRTG\BIN>PERL MKCFG.PL C:\PERFLOGS\DAAKGHAR.CSV >DAAKGHAR.CFG
```

Please note here *daakghar.csv* & *daakghar.cfg* represents the Name of the server & the log file which is already been created in the previous section. Now open the **daakghar.cfg** file with notepad & see the file content.

Important - If the graphs don't look right then adjust the MaxBytes value in the cfg file. Delete the associated png file in the logs directory and wait for the next update.

## **CREATING LOG DIRECTORY**

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Create a directory under **c:\mrtg "logs"**

## **COLLECTING THE STATISTICS DATA**

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In order to use the .cfg file you have to use another script to execute. Copy & paste the following code & save it as **getlog.pl**

```
#!/ c:/perl/bin/perl  
#perl getlog.pl c:\perflogs\daakghar.csv  
#  
# Input: filename of Windows 2000 Performance monitor log file (must be CSV format)  
# Name of log item to extract  
# eg. perl getlog-fixed.pl c:\perflogs\K6.csv "\\DAAKGHAR\LogicalDisk(C:)\% Disk Time"  
# Output: mrtg data format  
#  
$STUFF=@ARGV[0];  
open STUFF or die "Cannot open $STUFF for read :$!";  
@entries = <STUFF>;  
@details=split /,/, @entries[0]; #get the first line of the log file  
@lastline=split /,/, @entries[$#entries]; #get last line of log file  
  
#find the entry that matches $ARGV[1]  
$index=-1;  
for $entry (@details) {  
    $index++;  
    $entry=~ tr/"//d;  
    chomp ($entry);  
    $last=$entry;  
    last if $entry eq $ARGV[1];  
}  
  
if ($last eq $ARGV[1]) {  
    $data=@lastline[$index];  
    $data=~ tr/"//d;  
    $data = int($data+0.5);  
} else {  
    $data = 0;  
}  
print "0\n";  
print "$data\n";  
print "0\n";  
print "0\n";
```

Next open your command prompt -

```
C:\MRTG\BIN>PERL MRTG DAAKGHAR.CFG
```

If you now look in the `c:\mrtg\logs\daakghar` directory, there should be a bunch of files. Look for the html files. These are the MRTG web pages for each performance counter.

### **CREATING AN UPDATE SCRIPT TO UPDATE THE GRAPHS**

Copy and paste the following code in the notepad & save as **start.pl**

```
$interval=300; while (1) { sleep( $interval - time() % $interval );  
system 'perl mrtg daakghar.cfg';  
}
```

Put this script in `c:\mrtg\bin\start.pl`

You can add this script as a short cut in your "start up" directory. Or else if you would like to run this script manually type in command prompt-

```
C:\CD \MRTG\BIN  
C:\CD \MRTG\BIN> PERL START.PL
```

**Important:** don't close this window, or else you won't be able to get the updater graph.

### **INTEGRATING WITH APACHE WEB SERVER: (OPTIONAL)**

If you would like to see the updater in you browser automatically, then you need to install & run a web server to fetch it.

Download & install Apache for win32 [<http://www.apache.org/dist/httpd/binaries/win32/>] version.

Edit **httpd.conf** (**start > Apache HTTP Server > Configure Apache Server > Edit the Apache httpd.conf Configuration File**)

Create a virtual host-

```
NameVirtualHost *  
<VirtualHost * >  
ServerName mrtg.localhost  
DocumentRoot "c:/mrtg/logs/"  
</VirtualHost>
```

Make an index.html file inside `c:\mrtg\logs` which will hyperlink all the .html files inside the logs directory.

Any comments or for any question email at [rumi@tweenpath.com](mailto:rumi@tweenpath.com)

The above procedure is the most basic way to install MRTG on any NT based server.

## **FOR MORE DETAILS ABOUT MRTG & OTHER USEFUL LINKS**

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1. **MRTG Home site** [<http://people.ee.ethz.ch/~oetiker/webtools/mrtg/>]
2. **Paul Simmons MRTG ported on WinNT** [<http://www.wn.com.au/psimmo/>]
3. **Jeff Liebermann's NT MRTG Solution for win 9X**  
[<http://people.ee.ethz.ch/~oetiker/webtools/mrtg/nt-guide.html>]
4. **SNMP for Public Community** [<http://www.wtcs.org/snmp4tpc/default.htm>]