# System

## Q1. Why does the device memory usage exceeds 80% right after startup?

**A:** To achieve robustness and efficiency, we don't allocate memory dynamically (runtime) in M510. Instead, we pre-allocate almost all necessary memory spaces for tables and data objects during booting up and then do the memory management by our own program, not the Operating System. Although the memory usage looks high right after the booting, it tends to keep stable (from 80% to 89%) without too much peaks.

## Q2. Why does D-Link strongly suggest not to manage DFL-M510 from Internet?

**A:** Since the communication between M-510 device and Java GUI could be quite bandwidth-consumptive (especially in signature download or firmware upgrade), the GUI communication possibly affect the upstream bandwidth and introduce more latency to outbound traffic. Moreover, the administrator may not have smooth RTM transaction by the way if the upstream bandwidth is quite limited.

## Q3. Do the “Standby Hosts” disappear from host table after rebooting?

**A:** “Standby Hosts” will disappear only if device is reset to factory default status or the user manually remove them from UI. On the other hand, “Standby Hosts” is stored in non-volatile memory so that rebooting the device does not clear it either. One noticeable technical issue is the M510 store the “Standby Hosts” temporarily in a one-way hash table, and a host record could be overwritten by another if hash collision happens.

## Q4. After rebooting the DFL-M510, what configuration files would disappear? (Host table? Policy? Report? …)

**A:** The report files and User Login logs will disappear after the reboot

## Q5. What would happen after the hosts exceed 150 users?

**A:** Dropped or forwarded immediately. This is optional by setting the configuration “forward” or ”block” flag in “Setup Host” page of UI.

## Q6. How does DFFL-M510 learn the host name? Why sometimes host name not shown? How often to send the host name query?

**A:** DFL-M510 utilizes the WINS service to make queries for host names. Sometimes there is no name for a host in UI host table, and it may come from the following reasons:

It is not a Microsoft Windows platform and does not support the WINS services

The host is enabled with the firewall embedded within Microsoft Windows platform and the firewall blocks the WINS service.

The WINS service is disabled by user

The host name query begins from the moment right after it has been learned by M-510, and the device negotiates with the host to get a name immediately. If the first query is failed, DFL-M510 will send the other two queries in a 5 minutes' interval. If these three queries all fail, the name learning process is closed for this host.

## Q7. What would happen after the concurrent session exceed 12K?

**A:** Dropped or forwarded immediately. This is optional by setting the configuration "forward" or "block" flag in "Setup Host" page of UI.

## Q8. What LOG information would be included in DFL-M510 ?

**A:** The DFL-M510 does not contain disk to store large bulks of data for log and report, so that we only save the necessary information for network users which is "System Log" now.

## Q9. Does DFL-M510 go back to original pattern after we reset to default settings?

**A:** No. When you reset to default, device only clean the user's configuration. The pattern also using the latest version which you upgraded

## Q10. How many data (days) would be kept in DFL-M510 for report?

**A:** DFL-M510 keeps 7-day reports in system memory but they will be gone if device is reset or reboot.

# Deployment

## Q1. What is the difference between Bypass Mode and Bypass Feature (DMZ/Hosts)?

**A:** The Bypass Mode is performed by the system software, so that the packet information including protocol and throughput is still recorded by the device. On the other side, the Bypass feature is implemented by the hardware engine, so that although it's forwarding in wire-speed high performance, there will be no related information left.

## Q2. How to implement DFL-M510 in the environment with L3 device?

**A:** We do not suggest a user to put any Layer 3 switch beneath the DFL-M510. Though it will not suffer the security and control management, the host information of traffic through the switch will be aggregated.

## Q3. When are the occasions to use the DMZ bypass or Host bypass? Why?

**A:** The DMZ is a trust area so that we do not have to check the traffic from this area and the high throughput is desired. The same idea is also applied for hosts. A network administrator can insert the DMZ servers into DMZ bypass list and host into host bypass list for the wire-speed performance from DFL-M510. (But there is no log/report for the bypassed traffic.)

## Q4. How DFL-M510 manage internal hosts in the DHCP environment?

**A:** The DFL-M510 identifies the internal hosts by their unique MAC addresses, so that the device will provide the precise traffic information and management capability in DHCP environments. When you enable the "MAC-Lock" feature in the host table, no matter how the IP address change, it would bind to the same MAC address.

## Q5. How to deploy DFL-M510 in VLAN environment?

**A:** In VLAN environment, the network administrator has to set up the supporting VLAN Group IDs (up to 8) through the DFL-M510 console or UI.

# UI

## Q1. Why Login time is so long? What would be the factors to affect this ?

**A:** In Login process, UI (by Java applet) read several data and system configurations from the device and these suffer the login process. They include Network setting, DMZ list, Bypassed hosts, Host table, Schedule, Policy file, Operation Mode, Templates,

Groups, and Alert Message.

## Policy Setting

### Q1. How many groups/templates/use-define patterns does DFL-M510 support?

**A:** Group: 10 groups

Template: 20 templates (built-in templates included)

User-defined rule: 512 rules

### Q2. What does “Default Group” used for ?

**A: All user is belong to Default group.**

### Q3. Why there are Priority for each groups in DFL-M510 ?

**A:** If the host belongs to multiple groups, the policy will different. For example, John belong Group A and Group B. Two group’s policy is different. DFL-M510 differentiate base on group priority

### Q4. Are Hosts able to belong to multiple Groups at the same time?

**A:** Yes, hosts can belong to multiple groups. But the policy will different, the policy will depend on group priority.

### Q5. Why template can only be applied to a pre-defined group, and cannot be applied to a single host?

**A:** It is true that the user cannot apply the modified rule template to a single user. The user has to add the specified host into a host group before applying the rule template on it. We’re doing this because we figured it’s more convenient to divide Intranet hosts into different groups, and the administrator can define different templates accordingly. It makes more sense to operate on group level than host level because in general there are not many different templates in SME, and the policies applied to a host don’t tend to change too often. Moreover, in our design a host can belong to different groups and there’re priorities among groups. For example, the CEO of the company can be in “Administrator” group and “Default” group in the same time. But he will only inherit the privilege of “Administrator” group due to its higher priority. But since there’re priorities among host groups, we don’t allow host-wise template operation because we cannot prioritize between the single host and a host group. Indeed it introduces a little inconvenience when applying a template to single host, but eventually the user benefits from the host group design.

## Q6. Why "Wizard_Template" created by Setup Wizard is unable to modify?

**A:** This Template is belong pre-define template list, like the "Block all" Template. It can't modify/delete. This Template is generated by System/Setup Wizard. If you want to modify it, please run System/Setup Wizard again.

## Q7. Why the action "WinPop-up message" fails?

**A:** he Windows Pop-up messages are delivered through UDP packets and this service has low priority in Windows system. As the testing result shown, Windows system possibly could receive the WinPop-up messages without showing them up. Moreover, If the personal firewall is enabled in the system, the WinPop-up message could be blocked up to the firewall policies. In addition, the WinPop-up service is able to be shutdown freely in the target system.

## Q8. Does DFL-M510 can send Pop up message to clients in different Subnets under L3 Switch?

**A:** WinPop-up messages are delivered by the DFL-M510 through UDP stream directly to the target (i.e., not through the gateway, even the target is in the different subnet). So that if the device and the target are not in the same subnet, the Winpop-up messages will not reach to the target host.

## Q9. Why there are only 9 Keyword filters in DFL-M510?

**A:** We think nine filters is enough to normal situations. Performance issue is another design consideration in this case.

# Real-Time Monitor

## Q1. Why does RTM show no data?

**A:** The reasons may be：

1. Device is so busy that it couldn't send RTM to UI
2. There are some exceptions in UI's Java console
3. Device doesn't hit any rules (If no data means no top-n events)

Scenario 1 - the RTM shows no data while the time axis keep going as time elapses: It may be because there is no network traffic passing through the device or the device is too busy to send the real-time data.

Scenario 2 - the time axis of the RTM does no go as time elapses: The RTM crashes because some unexpected error has happened. User may need to close the UI and re-login the system again.

## Q2. How many bytes would transfer from DFL-M510 to PC for RTM ?

**A:** The maximum is 120K bytes/5 sec. However, this only happens in extreme case: 150 hosts fully learned, and 4096 rules hit in 5 seconds. The size of real-time information in clean traffic (i.e., no hit at all) is 104 bytes/5 sec.

## Q3. How often to refresh the data in Real time Application ( APP/health concerns)?

**A:** Every 5 seconds. More detail and why?

## Q4. What are the main features of RTM in DFL-M510?

**A:** Three main features of the real-time monitor:

1. The traffic monitor which allows administrator to monitor the traffic, in terms of bytes or bps, of selected types of applications.
2. The application monitor which allows administrator to monitor the application usage of every managed host.
3. Two-layered Top N chart which allows administrator to query from seven types of Top N list and or to further investigate another Top N list based on a selected result of the first Top N query. For example, the administrator is possible to query the Top N applications first and then query the Top N users of one of the selected result of the Top N applications

### Q5. Is it possible to identify the victim infected by malicious problem with RTM?

**A:** Yes. The victim information can be retrieved from the “Top 10 Health Concerns / Top 10 Users” and “Top 10 Users with Health Concern / Top 10 Health Concern” in DFL-M510 Real Time Monitor page of UI.

## Application Pattern

### Q1. How often the new pattern would be released?

**A:** Every 2 weeks in general. D-Link would check all applications supported in DFL-M510 to see if there is the new version released.

### Q2. How H.323 works? By port? By protocol?

**A:** We use a port range (TCP port 1023-5000) and specified patterns to identify the H.323 protocol, not only by single TCP port 1720.

### Q3. Are new patterns all backward compatible with order version of application?

**A:** We have tried to make signatures for all the older version of each application. Yet once in a while we got reports from our customers that some older applications cannot be detected. In such case we would need customers’ help to provide the application to us so that we can make signature for it.

### Q4. How many P2P applications does DFL-M510 could manage?

**A:** The applications for each P2P network are listed below:

**Gnutella**

BearShare *

Gnucleus *

Shareaza *

iMesh

KCeasy

Kiwi Alpha

For more information about P2P applications employing Gnutella network, please refer to below links:

http://en.wikipedia.org/wiki/Gnutella

http://www.slyck.com/gnutella.php?page=2

**FastTrack**

Kazaa *

Grokster *

MLDonkey *

iMesh

giFT-FastTrack

For more information about P2P applications employing FastTrack network, please refer to below links:

http://www.slyck.com/ft.php?page=2

http://en.wikipedia.org/wiki/Fasttrack

**eDonkey2000**

eDonkey2000 *

eMule *

MLDonkey *

Shareaza *

Hydranode

MediaVAMP

Iphant

For more information about P2P applications employing eDonkey 2000 network, please refer to below links:

http://www.slyck.com/edonkey2k.php?page=2

http://en.wikipedia.org/wiki/EDonkey_Network

**BitTorrent**

BitComet *

Azureus

Yet ABC

WinMobile Torrent

For more information about P2P applications employing BitTorrent 2000 network, please refer to below links:

http://www.slyck.com/bt.php?page=2

http://en.wikipedia.org/wiki/Bittorrent

**WinMX**

WinMX *

**DirectConnect**

DirectConnect *

For more information about P2P applications employing DirectConnect network, please refer to below links:

http://www.slyck.com/dc.php?page=2

**Kuro**

Kuro *

**Pigo**

Pigo *

**Note**: applications marked with * have been tested with DFL_M510 device. Other applications listed above, though not officially tested with DFL_M510, should be blocked by M510 since they employ the P2P networks identified by DFL_M510.

## Q5. What's the difference between HTTP and web control in real-time application?

**A:** Web Control includes the categories of web application and web mail. HTTP is a subset of web control. For example, the action of Yahoo web mail is both in HTTP application and Web Control. However, the web mail utilization of Gmail is only classified into Web Control, because it follows HTTPS protocol.

## Q6. Is it possible to block all VoIP software which utilizies H.323 protocol? ( not just Netmeeting)

**A:** Currently we only test H.323 protocol on NetMeeting. H.323 signature is supposed to detect a lot of applications employing H.323 protocol.

## Q7. Does web content keyword only block ASCII code content? How does it work?

**A:** It supports multiple encoding methods for different languages, and the Java applet will encode the input keyword according to the default encoding setting of the management console. If the input keyword string is not in ASCII characters, then it first will be encoded into a sequence of bytes using the default character set of the management client and saved to the device. The device will filter out the packets with the matching byte sequence. For example, if the user runs the management client on a PC and its default character set is Cp1512 (Russian), and the user enters the keyword “решетчатая система”. According to Cp1512, the given keyword will be encoded as the following byte sequence:

[0xF0, 0xE5, 0xF8, 0xE5, 0xF2, 0xF7, 0xE0, 0xF2, 0xE0, 0xFF, 0x20, 0xF1, 0xE8, 0xF1, 0xF2, 0xE5, 0xEc, 0xE0]

Packets with a matching byte sequence will be filtered out as they are received by the device. However, the same string encoded in a different way will pass through the device provided no other filter catches it.

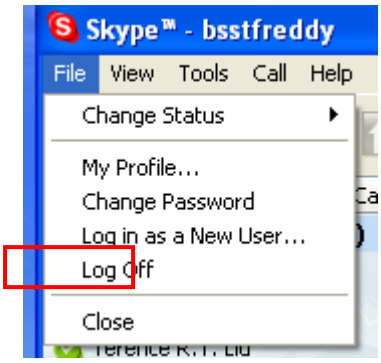
## Q8. Why ICQ/AIM/iChat use the same pattern?

**A:** These three applications employ same protocol framework and same packet encapsulation format. As such, they have the same signature for same behavior.

## Q9. What is the limitation to detect and block Skype ?

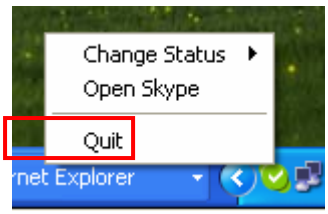
**A:** With DFL-M510-Pattern-3.16, there are two known constraints for blocking Skype:

1. A network administrator sets DFL_M510 to block Skype *after* an internal user has logged into Skype network, and the user never logs off.




2. A user first login to Skype network with his/her computer at other place, do not log off, and connects his/her computer to the network managed by DFL-M510.

**Note:** by definition, the behavior below is called **quit** Skype network, which is different from the behavior of **log off** Skype.




## Q10. How does "Web Download " work? Any constrains?

**A:** The "Web download' in DFL_M510 stands for a network behavior that employs HTTP GET command to download files from a web server. When a user clicks a download link and tries to download files, the browser sends an HTTP GET request to the web server. At the same time the file name to be downloaded and the file location are also sent with the HTTP GET request. By identifying HTTP GET request and the file extension name, which usually identifies the file format of the file, DFL_M510 is able to know that a user is trying to download a file.

Below is a list of common file type and their file extension names. File extension name supported by "Web download" is marked with YES in the last column.

| AP class | AP name | Extension | Content-Type | Support |
|---|---|---|---|---|
| **Office** | MS Word | doc | application/msword | Yes |
| | MS Powerpoint | ppt | application/vnd.ms-powerpoint | Yes |
| | MS Excel | xls | application/vnd.ms-excel | Yes |
| | Adobe acrobat | pdf | application/pdf | Yes |
| | Notepad | txt | text/plain | |
| | Text RTF | rtf | application/rtf | |
| | | | | |
| **Compression** | ZIP | zip | application/zip | Yes |
| | RAR | rar | | Yes |
| | TAR | tar | application/x-tar | Yes |
| | GZ | gz | application/x-gzip | Yes |
| | BZ2 | bz2 | application/x-bzip2 | Yes |

| | | | | |
|---|---|---|---|---|
| | Redhat RPM | rpm | application/x-redhat-package-manager | Yes |
| | | | | |
| **Excutable file** | Windows | exe | application/octet-stream | Yes |
| | | | | |
| **Audio** | AAC | M4p | | |
| | MP3 | mp3 | | |
| | | | | |
| **Video** | Mpeg2 | mpg | | |
| | | | | |
| **Graph** | PNG | png | | |
| | GIF | gif | application/gif | |
| | JPG | jpg | application/jpeg | |
| | TIFF | tiff | application/tiff | |

## Q11. Does "Web Mail" pattern only detect the URL?

**A:** No. As for Yahoo web mail, DFL-M510 identifies the behavior of opening web mail pages after a user has logged in to Yahoo web mail. As for Hotmail, DFL-M510 blocks URL plus parameters that are necessary for web mail services. For Gmail, DFL-M510 block URLs that are known to connect to Gmail.

## Q12. Is there any detail Application list supported by DFL-M510?

**A:** Yes. Please refer to the ***DFL-M510 Application Pattern List*** ( Latest version of Pattern is ver. 3.17) provided by D-Link.

## Q13. How does DFL-M510 manage Streaming Media Applications?

**A:** DFL-M510 manages Streaming Media Applications by identifying signatures of Streaming Media Applications.

## Q14. Why DFL-M510 only can block or allow Skype / QQ? No granular action control?

**A:** After a user logs into Skype or QQ, all the transmission is encrypted and as a result there is no significant signatures of their other behaviors such as sending messages, sending files, or voice chatting.

## Q15. How does DFL-M510 manage normal FTP and FTP applications like GetRight/FlashGet?

**A:** Because GetRight/FlashGet is management software of downloading files, when users use GetRight/FlashGet to download files via FTP, such network behavior acts like a normal FTP application and makes no difference between normal FTP and other FTP management applications. As such, DFL-M510 can't distinguish between normal FTP and other FTP management applications.

## Q16. Is the signature unidirectional or bidirectional? (APP/worm)

**A:** The direction of the signature varies from one application to another. It's all up to the behavior.

For signatures detecting IM's behaviors such as File Transfer, Chat, Online Game, Audio Communication, and Video Communication, the directions are bidirectional. This means that DFL M510 can detect such attempts either from LAN to WAN or from WAN to LAN.

For signatures detecting HTTP download attempts, IM login attempts, Web Mail controls (Yahoo Mail, Gmail, and Hotmail), Web Upload, Web Download, and Java Applet download attempts, the directions are unidirectional.

For signatures detecting malicious traffic made by worm/Trojan, the direction is bidirectional.

# Misc.

## Q1. Worm/Trojan list

| A. Worm | |
|---|---|
| Item | Description |
| 1 | WORM Windows Lsasrv.dll RPC Overflow(Sasser) |
| 2 | WORM Windows Lsasrv.dll RPC Overflow (Sasser)-1 |
| 3 | WORM Windows Lsasrv.dll RPC Overflow Unicode (Sasser) |
| 4 | WORM Windows Lsasrv.dll RPC Overflow Unicode (Sasser)-1 |
| 5 | WORM HTTP IIS CodeRed |
| 6 | WORM IIS default.ida access (CodeRed v2) |
| 7 | WORM DCOM System Shell Exploit Response (Blaster) |
| 8 | WORM DCOM Successful Shell Exploit Response (Blaster) |
| 9 | WORM Windows RPC DCOM Interface exploit - 135 (Blaster) |
| 10 | WORM Windows RPC DCOM Interface exploit - 445 (Blaster) |
| 11 | WORM Windows RPC DCOM Bind attempt (Blaster) |
| 12 | WORM WEB-IIS WebDAV exploit attempt.a (Blaster) |
| 13 | MISC OpenSSL Worm traffic |
| 14 | WORM slapper admin traffic |
| 15 | DoS MS-SQL Slammer Worm |
| 16 | WORM .emf Heap Overflow (MS04-032) -1 |
| 17 | WORM .emf Heap Overflow (MS04-032) -2 |
| 18 | WORM .emf Heap Overflow (MS04-032) -3 |
| 19 | WORM MS04-034 zipped Folders Exploit via http |
| 20 | WORM MS04-034 zipped Folders Exploit via smtp_1 |
| 21 | WORM MS04-034 zipped Folders Exploit via smtp_2 |
| 22 | WORM MS04-034 zipped Folders Exploit via smtp_3 |
| 23 | WORM RealPlayer SMIL File Handling Buffer Overflow |
| **B. Trojan /Backdoor** | |
| 1 | TROJAN LSASS.EXE 53/TCP |
| 2 | BACKDOOR Malice over SMTP |
| 3 | BACKDOOR Malice IRC server ping |
| 4 | BACKDOOR Malice IRC server message |
| 5 | ACKcmdC trojan scan |
| 6 | QAZ Worm Client Login access |

| | |
|---|---|
| 7 | CDK |
| 8 | shaft agent to handler |
| 9 | FINGER cmd_rootsh backdoor attempt |
| 10 | BACKDOOR hack-a-tack attempt |
| 11 | MISC ramen worm outgoing |
| 12 | WEB-MISC OpenSSL Worm/Slapper |
| 13 | linux rootkit ftp attempt (lrkr0x) |
| 14 | linux rootkit ftp attempt (d13hh[) |
| 15 | linux rootkit ftp attempt (satori) |
| 16 | linux rootkit ftp attempt (hax0r) |
| 17 | BACKDOOR Remote PC Access connection attempt |
| 18 | TROJAN active-BackOrifice1-web |
| 19 | TROJAN active-BackConstruction 2.1 ftp open reply |
| 20 | TROJAN dagger_1.4.0_client_connect |
| 21 | TROJAN active-netbus-12346 |
| 22 | TROJAN worm-QAZ calling home |
| 23 | TROJAN BackOrifice1-scan |
| 24 | TROJAN trojan-h0rtiga |
| 25 | TROJAN active-netbus-12345 |
| 26 | TROJAN active-DeepThroat |
| 27 | TROJAN active-BackConstruction 2.1 ftp open reques |
| 28 | TROJAN active-HackAttack 1.20 |
| 29 | TROJAN active-mosucker11-badlogin |
| 30 | TROJAN active-Doly2.0 |
| 31 | TROJAN active-PhaseZero server |
| 32 | TROJAN active-Infector 1.6 server to client |
| 33 | TROJAN active-deepthroat_ftpd |
| 34 | TROJAN active-CAFEini0.9 |
| 35 | TROJAN netbus-getinfo-12346 |
| 36 | TROJAN active-DonaldDick 1.53 |
| 37 | TROJAN worm-QAZ infection |
| 38 | TROJAN active-subseven22 |
| 39 | TROJAN active-mosucker21 |
| 40 | TROJAN active-BackConstruction 2.1 |
| 41 | TROJAN ative-SatansBackdoor.2.0.Beta |
| 42 | TROJAN active-BackOrifice1-dir |
| 43 | TROJAN active-dagger_1.4.0 |

| | |
|---|---|
| 44 | TROJAN Y3K-Rat-1.3 |
| 45 | TROJAN netbus-getinfo-12345 |
| 46 | TROJAN active-BackOrifice1-info |
| 47 | BACKDOOR FsSniffer connection attempt |
| 48 | BACKDOOR DoomJuice file upload attempt |
| 49 | TROJAN apple.net query |
| 50 | Trojan Netbus 2.1 |
| 51 | BACKDOOR SubSeven 2.0 server connection response |
| 52 | Trojan BackOrifice 2000 ver 1.0 server connection response |
| 53 | Trojan BackOrifice 2000 ver 1.1 server connection response -1 |
| 54 | Trojan Evilbot connecting IRC server |
| 55 | TROJAN Slackbot active |
| 56 | TROJAN Phel.A infecting attempt |
| 57 | TROJAN Ceegar infecting attempt |
| 58 | BACKDOOR DeepThroat 3.1 Server Response - 3150 |

## Q2. What would happen after DFL-M510 block/detect malicious traffic?

A: By Layer 7 detection engine, DFL-M510 will drop the corresponding packet which is classified as a malicious packet. Furthermore, the device logs the event for the report and sends the data to the real-time monitor of UI if it exists. If this malicious behavior is through TCP connection, then the connection will be blocked and put into a black list for denying further communication.

## Q3. Is there any SNMP Set/Get/Trap list?

**A:** The user can set the following SNMP objects: sysName, sysContact, and sysLocation.

The user can get the following SNMP objects: sysName, sysContact, sysLocation, and sysDescr.

The device sends the SNMP trap messages when system boot up and the change of link status (link up/down).

## Q4. Are there any logs for worm/Trojan detected or application signature matching?

**A:** By Layer 7 detection engine, DFL-M510 will drop the corresponding packet which is classified as a malicious packet. Furthermore, the device logs the event for the report and sends the data to the real-time monitor of UI if it exists. If this malicious behavior is through TCP connection, then the connection will be blocked and put into a black list for denying further communication