

Using scripts to easily configure and maintain MNS-6K software

Configuration accuracy and configuration consistency are extended beyond the CLI or SWM standard commands for MNS-6K users' Ease-Of-Use



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Preface

The use of scripts can automate configuration management for Magnum 6K family of switches.

This guide describes how to use scripts with MNS-6K to configure and easily manage the deployment of Magnum switches on a network. This process is best used for many similar switches deployed in a network. This process can also be used for achieving and restoring the configuration of a switch in a network with precision.

Using this process, a network administrator can distribute consistent configuration for switches in a network. This ensures consistent error-free switch configuration as well as security settings on all switches, avoiding security holes or vulnerabilities in the network. This process also simplifies and minimizes the repetitive task of manually configuring each switch when multiple Magnum 6K Switches are deployed.

GarrettCom Inc.
47823 Westinghouse Drive
Fremont, CA 94539-7437
Phone (510) 438-9071 • Fax (510) 438-9072
Email – Tech support – support@garrettcom.com
Email – Sales – sales@garrettcom.com
WWW – <http://www.garrettcom.com/>

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Before starting



GarrettCom Inc. assumes that there is an ftp server or a tftp server on the network and that this server is accessible by the Magnum 6K switches on the network. Make sure that your firewall settings allow for ftp or the tftp access¹.

For updating the switches, the switches need to be assigned an IP address. IP addresses can be dynamic or static. Most network administrators tend to assign static IP addresses to networking devices so that they can be managed easily. This example assigns a static IP address to the switch. If the IP address is changed, please remember that the current session – whether via telnet or SWM will terminate. You will have to re-initiate the connection with the new IP address assigned.

Finally, as a good practice, it is recommended that the first few upgrades be performed in a controlled environment where any changes can be viewed easily and errors can be fixed easily. Once the scripts process and the methods are well understood, the techniques can be followed and used with confidence to configure remote switches.

This document assumes the user is familiar with the MNS-6K Command Line Interface commands available on the GarrettCom Magnum 6K family of switches. These are covered in the User Guides – the **CLI User Guide** as well as the **SWM User Guide**, which can be downloaded from the GarrettCom Inc. web site – www.garrettcom.com

Introduction

This document shows how multiple switches can be updated using the script upload and download capabilities available in MNS-6K software. Using this technique, the switches can not only be updated with a new IP address, but the network administrator can also load consistent configuration settings on the switches using this capability.

The steps involved are as follows

- 1) Configure the first switch as needed. Use standard CLI or SWM commands to do that.
- 2) Once the switch is configured, upload the configuration to the ftp (or tftp) server.
- 3) Modify the CLI commands in the file on the server as needed for the next switch
- 4) Download the new configuration to the target switch
- 5) (Optional) Access the switch to verify that the new configuration is active

¹ ping is not always a good test – in many organizations, ping (ICMP) protocol is allowed internally, however, ftp and tftp protocols are blocked. The best way to test accessibility for ftp or tftp is to upload/download a test file from a client to the server.

In this document, we now assume that the first step is complete. For more details on how to do the first step, please refer to the **CLI User Guide** or **SWM User Guide** on the GarrettCom Inc. web site – www.garrettcom.com under “Tech Support”

Procedure

As stated earlier, we assume that the first step is now complete, i.e., one switch is configured having used either CLI or SWM to do that. Next, save the configuration to a tftp (or ftp) server. To save the configuration using tftp, follow the steps on the screen below.

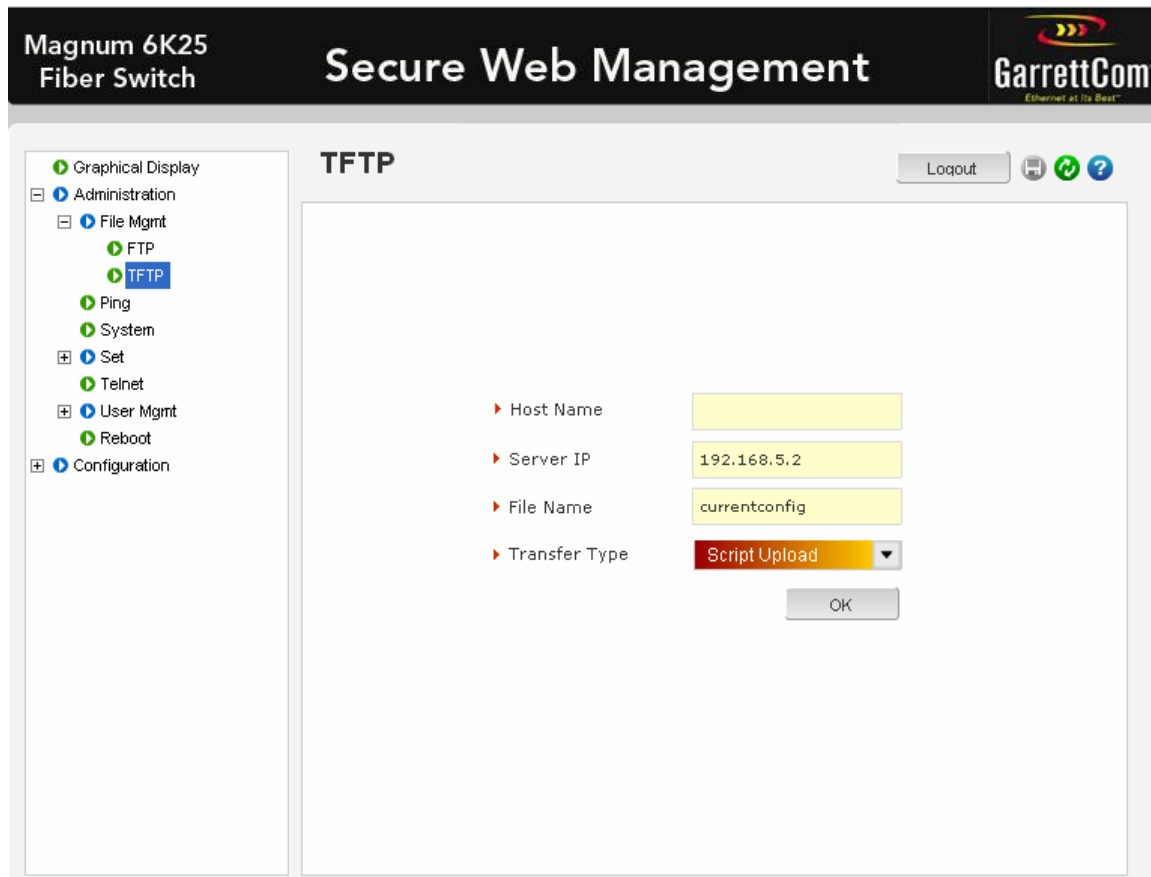


FIGURE 1 – Once a switch is configured as needed, the set of configuration commands (script) can be saved using the script upload command. Note if ftp is used, the set of commands are the same – some additional information (such as user name, password) has to be supplied for the ftp server

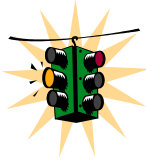
CLI commands to do the same are

```
Magnum6K25# tftp put type=script ip=192.168.5.2 file=currentconfig
```

```
Do you wish to export CLI script file? ['Y' or 'N'] YES
```

```
Successfully exported the CLI script
```

FIGURE 2 - equivalent CLI command to the SWM screen shown above. Note - the ftp command can be used instead of the tftp command if the server is a ftp server



After the configuration is saved, there are two sets of edits the network administrator has to perform before the configuration is uploaded

- 1) Edit the IP address, gateway and netmask
- 2) If the target switch has different modules, the port numbers of the target switch may be different. As a result the specific CLI commands associated with specific port numbers will have to be changed to match the different port numbers

In the above example, the file with the necessary CLI commands, or script file, will be called “currentconfig”

The content of the file will look like

```
#####  
# Copyright (c) 2001-2005 GarrettCom, Inc All rights reserved.  
# RESTRICTED RIGHTS  
# -----  
# Use, duplication or disclosure is subject to U.S. Government restrictions as set forth in  
# Sub-division (b)(3)(ii) of the rights in Technical Data and Computer Software clause at  
# 52.227-7013.  
#  
# This file is provided as a sample template to create a backup of Magnum 6K switch  
# configurations. As such, this script provides insights into the configuration of Magnum 6K  
# switch's settings. GarrettCom recommends that modifications of this file and the commands  
# should be verified by the User in a test environment prior to use in a "live" production network.  
# All modifications are made at the User's own risk and are subject to the limitations of the  
# GarrettCom software End User License Agreement (EULA). Incorrect usage may result in  
# network shutdown. GarrettCom is not liable for incidental or consequential damages due to  
# improper use.  
#####  
  
#####  
# System Manager - This area configures System related          #  
#           information.                                         #  
#####  
  
set bootmode type=manual  
ipconfig ip=192.168.15.5 mask=255.255.255.0 dgw=192.168.15.254  
set timeout=10  
access  
telnet enable  
snmp enable  
web=enable  
exit  
  
#####  
# User Accounts - This area configures user accounts for accessing this system.  
#####  
  
user  
add user=manager level=2  
passwd user=manager
```

```
manager
add user=operator level=1
passwd user=operator
operator
exit
```

FIGURE 3 – A small section of the *cnfig* file downloaded from the switch. Note the file has been truncated for succinct viewing

GarrettCom Inc. recommends saving this file. In this example, we will use the name “template-config”. Edit the “currentconfig” file to reflect the new IP address and netmask as well as default gateway information for the target switch. Also update any CLI commands which have port-specific information (if the modules are different).

As shown in the figure above, each section is grouped and documented separately. The two sections displayed above are for System Manager and for the User Accounts.

Comments in a script file start with a “#” at the beginning of the line.

Each line in the script is the exact sequence of CLI commands. Thus, in the example above, the first eight lines are analyzed for clarity. The rest of the commands are covered in more details in the CLI User Guide.

```
set bootmode type=manual → This command sets the switch boot mode where the IP address is static or manually set
ipconfig ip=192.168.15.5 mask=255.255.255.0 dgw=192.168.15.254 → This command sets the IP parameters for the switch
set timeout=10 → This command sets the idle timeout to be 10 minutes

The next set of commands set the access policies

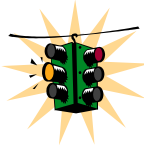
access → enter the “access” configuration sub-group
telnet enable → enable access via telnet
snmp enable → enable SNMP polling
web=enable → enable web access (for management via SWM)
exit → exit the access sub-group
```

FIGURE 4 – The first six lines of the *config* file analyzed in more details. The other lines follow the syntax for CLI commands described in the CLI User Guide

Modify the CLI commands in the script file as needed. Be careful – if the wrong command is issued, it may make the switch unreachable after the script is loaded².

After the CLI commands are modified, save the changes. In this example, we will use the name “currentconfig” which will be downloaded to the target switch.

² Should that happen, connect a computer to the console port and issue the `killconfig` command. This command is explained in more detail in the CLI User guide.



Make sure the very last command is the “save” command. This has to be added during the edit process. This causes the MNS-6K to download the configuration and then save the downloaded configuration. This has to be manually added as the very last line in the script command string. Without the save command, the uploaded configuration will be lost if the switch is rebooted either manually or due to other situations such as a power failure.³

Once the CLI commands are edited, the next steps are to

- Download the new configuration to the target switch
- (Optional) Access the switch to verify the new configuration is active

To download the configuration, access the target switch⁴ via SWM and follow the steps below.

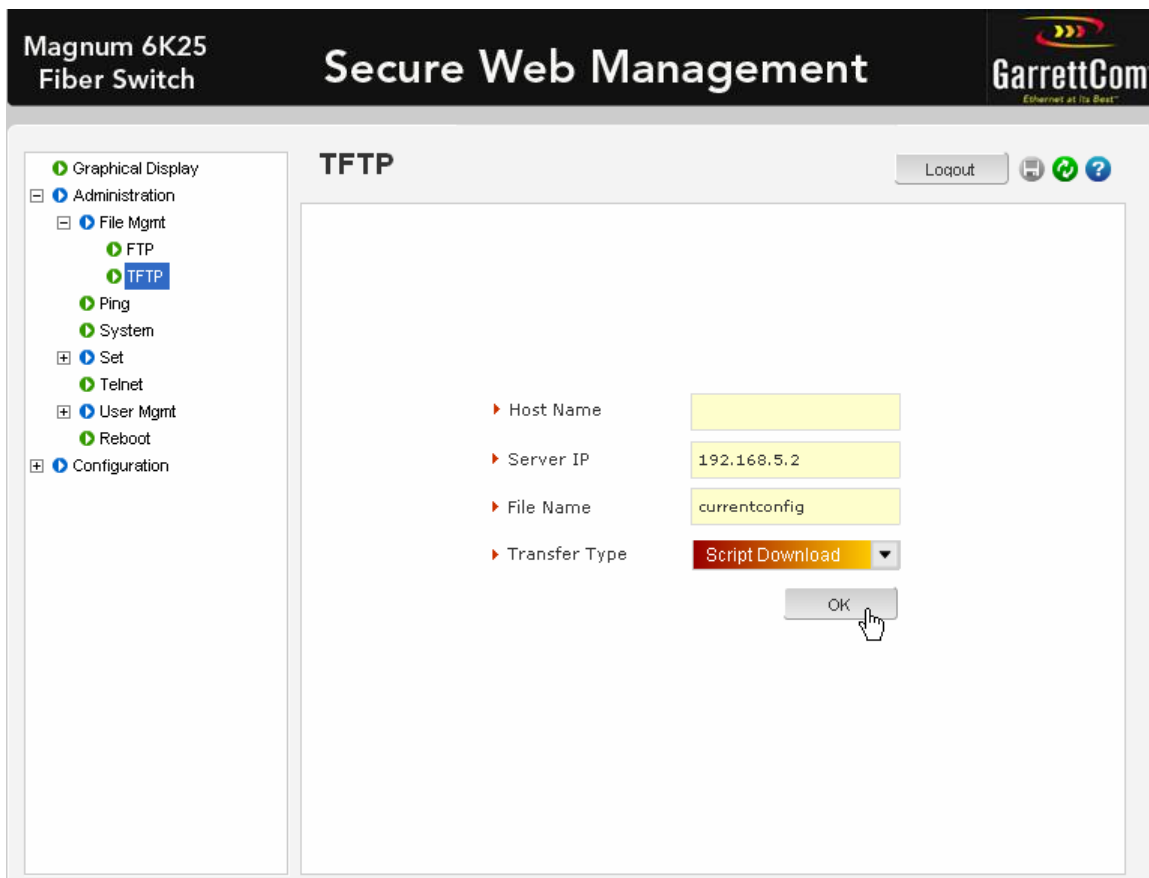


FIGURE 5 – *restoring the updated configuration*

³ For the very first instance, GarrettCom recommends to skip this save command, manually validate the changes are as expected, and then manually issue the save command on CLI or on SWM.

⁴ To access the switch, you will need to know it’s IP address. You may have to refer to the DHCP server on the network to get the IP address

At this stage, the SWM session may disconnect if the IP address has been changed. Make sure you can access the switch with the IP address as set in the configuration file uploaded.

CLI commands to do the same are

```
Magnum6K25# tftp get type=script ip=192.168.5.2 file=currentconfig
```

```
Do you wish to import from configuration file? [ 'Y' or 'N' ] Y  
Importing the configuration file, please wait...
```

FIGURE 6 - *equivalent CLI command to the SWM screen shown above for importing the saved configuration. This could take a long time depending on what is configured on the switch*

The final (optional) step is to verify whether the changes made have been stored. The easiest way is to access the switch via SWM and validate the configurations settings – e.g. VLANs, security settings, IP address, etc.