Configuring a 3Com 4400 switch from scratch

These notes have been created to support the installation of a 3Com 4400 switch in a site where the core (managed) switch is being replaced. Many of the aspects of these notes will be compatible with other models but this will need to be taken into account during their use on a case by case basis.

Version 1.12
15 March 2006

Thanks to Garry Talbot, Rex Bowden and many others for their invaluable comments
CONTENTS

DOCUMENT CONVENTIONS ........................................... 4

INITIAL CONFIGURATION ........................................... 5
  Console Cable Connection ........................................ 5
  Getting Started .................................................... 6
  Create VLANs ....................................................... 7
  Tag New VLANs to VLAN 1 ....................................... 8

CONFIGURE AN ADMIN CORE SWITCH ...................... 10

CONFIGURE A CURRICULUM CORE SWITCH ............ 12

CREATE A DUAL VLAN TRUNK ................................. 14

DESIGNATE A MANAGEMENT PORT ...................... 18

WEB INTERFACE .................................................. 19
  Connection – Admin workstation ............................... 19
  Connection – Laptop ............................................. 19
  Display Ports on a VLAN ....................................... 20

FIRMWARE UPGRADE TO 4.1 ................................. 22
  Confirm the current version ................................... 22
  Open a TFTP session ............................................ 22
  Perform the Upgrade ............................................ 23
  Using the Hyper terminal Interface: .................... 25

MAKING MINOR CHANGES .................................... 26
  Change the IP address ........................................ 26
  Change the Unit Name .......................................... 26
  Enable Spanning Tree .......................................... 26
  Enable IGMP Snoop ............................................ 27
  Enable Broadcast Storm Control .......................... 27

Note: If you are configuring a standard core switch, you will only need to complete the Initial Configuration and then either the Configure an Admin Core Switch or Configure a Curriculum Core Switch. The sections from page 16 onwards are optional. However a firmware upgrade may be required.
# DOCUMENT CONVENTIONS

The following are standard practices and formats used in the preparation of these notes.

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Esc]</td>
<td>Brackets denote a button than is pressed either on the screen or keyboard to complete a selection</td>
</tr>
<tr>
<td>{b}</td>
<td>When using the hyper terminal interface, command line selections can be reduced to as few letters of the selection as required to uniquely identify the selection. From the main menu, this selection combined with pressing enter on the keyboard would select the Bridge menu option.</td>
</tr>
<tr>
<td>{b v det a}</td>
<td>These are combined hyper terminal command line selections that would select the menu options Bridge, VLAN, Detail and all from consecutive menus to display the port detail for all VLANs on the switch. The combined commands must be separated by a space.</td>
</tr>
</tbody>
</table>

1 If you are feeling confident add this part from one command. Footnotes are used to further explain a topic or provide extra information.
INITIAL CONFIGURATION

Console Cable Connection

1. Connect to the switch using a communication cable.
2. Start up a hyper terminal session from the [Start] [All programs] [Accessories] {Communications} menu in Windows XP professional.
3. Enter a session {name} and press [OK]. By default these notes will assume after this that you press [Enter] after making a menu selection or entering data.

4. Make sure the port is set to [COM1] and press [OK]
5. Change the connection speed to [9600] and press [OK]

6. Wait a few seconds and press [Enter] several times to display the login entry area. You may need to wait a few seconds before the connection is made. Be patient at this stage.

---

1 The console cable is generally a flat cable that has a Com port at each end. This cable connects to Com1 on the computer and the switch.
Getting Started

1. From the initial menu, select \{g\} for *Getting Started*
2. Then \{m\} to start the manual setup of the IP address and display the default IP address.

```
Enter your selection {auto, manual, none}[auto]: ma
Enter IP address [169.254.100.100]:
```

3. Enter the designated \{IP address\} from the *Management IP*\(^2\) range (refer to the CSC if you do not have this address) so that this switch can be administered from an admin machine or remotely.
4. Enter the \{subnet mask\} and \{default gateway\} as per your records.

```
Enter your selection {auto, manual, none}[auto]: ma
Enter IP address [169.254.100.100]: 10.101.69.45
Enter subnet mask [255.255.0.0]: 255.255.255.224
Enter default gateway [10.0.0.0]: 10.101.69.64
```

5. System Details: Enter a \{system name\} \{System Location\} and \{System Contact\}

```
SYSTEM DETAILS
Enter system name []: Loan Switch
Enter system location []: Room 6 - Cabinet B
Enter system contact []: Paul Warneke
```

6. Although you have changed the Admin password, there are other passwords that should be changed. Enter \{y\} to proceed
7. Enter the admin \{password\}\(^3\)
8. Enter the standard \{Manager Password\} and confirm it
9. Enter the standard \{Monitor Password\} and confirm it.
10. Answer \{n\} to the Advanced setup section

```
ADVANCED CONFIGURATION
Advanced configuration allows you to configure SNMP Community Strings and SNMP Trap information.
Do you wish to set up the advanced configuration? (yes,no)[no]:
```

11. SYSTEM SUMMARY: check the changes and then if correct, enter \{y\}

```
SUMMARY
The parameters you have just entered are ready to be applied:
IP address assignment method: Manual
IP address: 10.101.69.45
Subnet mask: 255.255.255.224
Default gateway: 10.101.69.64
System name: Loan Switch
System location: Room 6 - Cabinet B
System contact: Paul Warneke
```

**WARNING:** A change of IP address details will cause loss of management communication with the device. You will need to re-establish contact with the device after the new parameters have been applied.

```
Do you wish to apply parameters? (yes,no)[no]:
```

12. Close the hyper terminal window

---

\(^2\) The *Management IP* range is separate to the sites *Admin* or *Curriculum* ranges and allow connection to the switch from the *Admin* network or from a remote site such as the CSC. The Default gateway for this entry is usually one IP less than that of the switch and the Subnet mask is also different to the normal school mask. Check these settings with the CSC if you are unsure.

\(^3\) The admin password is calculated from the site ID number and the manager and monitor passwords are standard for all sites and switch models. Contact the CSC if you are unsure of these details. Do not make up a password for any of the Core Switch user accounts.
Create VLANs

Before any of the port details can be applied, the three VLANs will need to be created and configured.

These notes assume that Port 1 on the core switch is going to be used for this connection. If the VLAN is going into a rear port\(^4\) (port 25 usually) then you will need to make these alterations as you proceed through these notes.

1. Open a hyper terminal session using the console cable.
2. Using a console connection, log in as the administrator
3. From the main menu, enter \(b v\) to display the VLAN menu

![Image of VLAN menu options]

4. At the moment there is only the default VLAN1 in existence. You need to create VLANS 100, 200 and 300. Being Admin, Curriculum and the DMZ.
5. Press \(c\) to create a VLAN
6. Enter \(100\)
7. Enter \(\text{Admin}\) as the VLAN name
8. Enter \(v c\)
9. Enter \(200\) as the VLAN identity
10. Enter \(\text{Curriculum}\) as the name
11. Enter \(v c\)
12. Enter \(300\) as the VLAN identity
13. Enter \(\text{DMZ}\) as the name
14. To confirm the existence of these new VLANs, enter \(v s a\)

<table>
<thead>
<tr>
<th>VLAN ID</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Default VLAN</td>
</tr>
<tr>
<td>100</td>
<td>Administration</td>
</tr>
<tr>
<td>200</td>
<td>Curriculum</td>
</tr>
<tr>
<td>300</td>
<td>DMZ</td>
</tr>
</tbody>
</table>

15. Press [Esc] to return to the main menu\(^5\)

---

\(^4\) Port 25 and port 26, in a 3Com 4400 are created when a stacking module is added or if you are using these notes for a 3Com 4200 series switch ports 25 and 26 are in the front panel of the switch. If you are using a stacking module, the Firmware version 4.1 you may need to set the port speed for this port manually as the firmware may not detect the port speed automatically. This setting can be done easily from the Web interface.

\(^5\) Throughout these notes, for the purpose of clarity, the main menu will be used as the starting point for configuration changes. The lower level menus can create confusion but you can ignore the repeated instruction to press [Esc] if you understand your position in the menu hierarchy.
Tag New VLANS to VLAN 1

Having created your VLANS they need to be connected to VLAN1 (the carrier from the router) so that in a later stage you can add ports to your three local VLANS. By default, all ports on the switch will be members of VLAN1 and be untagged. The following steps will assign ports 2-4 to the three VLANS you created.

1. From the main menu, enter \{b v\} to display the VLAN menu

   **Menu options:**
   - create - Create a VLAN
   - delete - Delete a VLAN
   - detail - Display detailed information
   - modify - Modify a VLAN
   - summary - Display summary information

   Type "quit" to return to the previous menu or ? for help

   Select menu option (bridge/vlan):

2. Enter \{m a\} to add a port
3. Enter \{100\} to select the administration VLAN
4. When you identify the port you also have to define the switch that you are referring to. This is always the case, even if there is only one switch. Enter \{1:1\} where the first ‘1’ is for switch 1 and the second ‘1’ is for the first port in the switch. Port 1 in switch 2 (the second switch in a stack) would be ‘2:1’.
5. Enter \{t\} to tag the port.

   Select menu option (bridge/vlan/modify): a
   Select VLAN ID (1,100,200,300)[1]: 100
   Select bridge ports (AL1-AL4,unit:port...?): 1:1
   Enter tag type (untagged,tagged): t

6. Repeat steps 3 – 6 to add port 1 to VLANS 200 and 300. Remember to tag these last two VLANS!
7. Press [Esc] to return to the menu.
8. Now to check your progress. Enter \{b v det a\} to display the following summary page.

   Depending on the initial state of your switch, VLAN 1 may show different untagged member ports depending on the initial configuration of your switch. Do not be concerned if this is the case, it is the tagged ports that should be checked at this point.

   **IMPORTANT**
   Your details for the un-tagged ports may vary but the tagged ports should be the same. Press Enter to see VLAN 300

     VLAN ID: 1  Name: Default VLAN
     Unit   Untagged Member Ports | Tagged Member Ports
     1      Aggregated Links 1-24   none
     VLAN ID: 100  Name: Admin
     Unit   Untagged Member Ports | Tagged Member Ports
     1      Aggregated Links AL1-AL4 none
     VLAN ID: 200  Name: Curriculum
     Unit   Untagged Member Ports | Tagged Member Ports
     1      none               1
     1      Aggregated Links none
     Enter <CR> for more or 'q' to quit--:
9. You will need to press [Enter] to display VLAN 300.

<table>
<thead>
<tr>
<th>VLAN ID: 300</th>
<th>Name: DMZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Untagged Member Ports</td>
</tr>
<tr>
<td>1</td>
<td>none</td>
</tr>
</tbody>
</table>

Select menu option (bridge/vlan):

10. At this stage, VLAN1 should be the only VLAN with any untagged member ports. The three VLANs 100, 200 and 300 should only have one tagged member port. That being Port 1 which is the link to VLAN1 from the router.

11. Press [Esc] to return to the main menu.

12. Up until now, the set up has been standard for managed switches. The next stage is to add ports to the three VLANs so that computers can be connected to the network and the internet. Before proceeding to the next stage, you need to decide on the final configuration of your switch, either as an Admin or Curriculum core switch. Depending on your choice, skip to the following pages:

- **ADMIN** core switch set up, go to page 10
- **CURRICULUM** core switch set up, go to page 12
**CONFIGURE AN ADMIN CORE SWITCH**

In this format, the majority of the ports in Unit 1 would be designated for admin use. In the diagram below, the ports are as follows:

<table>
<thead>
<tr>
<th>Unit 1:</th>
<th>Port 1</th>
<th>Purple</th>
<th>Link to router</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Port 2</td>
<td>Red</td>
<td>Untagged port to second switch (Curriculum)</td>
</tr>
<tr>
<td></td>
<td>Port 3</td>
<td>Green</td>
<td>DMZ</td>
</tr>
<tr>
<td></td>
<td>Port 4-24</td>
<td>Black</td>
<td>Admin</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit 2:</th>
<th>Port 1</th>
<th>Red</th>
<th>Untagged port to Unit 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Port 2-24</td>
<td>Red</td>
<td>Curriculum</td>
</tr>
</tbody>
</table>

**Note:** Unit two is for explanation purposes only.

**Note:** Port 2 on Unit 1 and Port 1 on unit 2 don’t have to be tagged as the connection is only carrying the Curriculum VLAN and so all ports on switch 2 will, by default, be Curriculum ports.

1. From the main menu, enter `{b v m}` to display the Modify menu

   ```
   Menu options: ---------------3Com SuperStack 3 Switch 4200---
   addPort       - Add a port to a VLAN
   name          - Name a VLAN
   removePort    - Remove a port from a VLAN
   Type “quit” to return to the previous menu or    ? for help
   Select menu option (bridge/vlan/modify):
   ```

2. Enter `{a}` to add a port

3. By default all ports are initially a member of VLAN1 and untagged so you will not need to add any ports to VLAN1

4. Enter `{100}` to select the admin VLAN

5. As this is going to be an Admin Core switch, the majority of the ports are going to be added to the Admin VLAN. Enter `{1:4-24}` to select these ports

   ```
   Select menu option (bridge/vlan/modify): a
   Select VLAN ID {1,100,200,300}|1|: 100
   Select bridge ports ([A-L],[A-L],unit:port,...?): 1:4-24
   Enter tag type (untagged,tagged): u
   ```

6. The process may take a minute or so in which time nothing will happen.
7. When the prompt returns, enter `{ma}`.
8. Enter `{200}` for the Curriculum VLAN.
9. Remember that you are working on Unit 1 in this exercise (Unit 2 is for clarification purposes only) so enter `{1:2}` to select port 2 of Unit 1.
10. Enter `{u}` for an untagged port

```
Select menu option (bridge/vlan/modify): a
Select VLAN ID (1,100,200,300)[1]: 200
Select bridge ports (AL1-AL4,unit:port...?): 1:2
Enter tag type (untagged,tagged): u
```

11. The last port to assign is port 3 to the DMZ. When the prompt returns, enter `{ma}`.
12. Enter `{300}` for the DMZ VLAN.
13. Enter `{1:3}` to select port 3 and `{u}` for an untagged port

```
Select menu option (bridge/vlan/modify): a
Select VLAN ID (1,100,200,300)[1]: 300
Select bridge ports (AL1-AL4,unit:port...?): 1:3
Enter tag type (untagged,tagged): u
```

14. Before proceeding it is best to check your results.
15. Press `[Esc]`
16. Enter `{b v det a}` to display the following summary page

```
VLAN ID: 1     Name: Default VLAN
Unit   Untagged Member Ports | Tagged Member Ports
------  ----------------------  ------------
 1      1                      none
 Aggregated Links AL1-AL4     none
VLAN ID: 100  Name: Admin
Unit   Untagged Member Ports | Tagged Member Ports
------  ----------------------  ------------
 1      4-24                   1
 Aggregated Links none         none
VLAN ID: 200  Name: Curriculum
Unit   Untagged Member Ports | Tagged Member Ports
------  ----------------------  ------------
 1      2                      1
 Aggregated Links none         none
VLAN ID: 300  Name: DMZ
Unit   Untagged Member Ports | Tagged Member Ports
------  ----------------------  ------------
 1      3                      1
 Aggregated Links none         none
```

**IMPORTANT**
Your details for the un-tagged ports may vary but the tagged ports should be the same. Press Enter to see VLAN 300

17. If there are no errors in your port summary, this switch is ready to be connected to the network.

---

6 If you are feeling confident, you could concoct all the individual entries into `{ma 300 1:3 u}` which would add this port from one command
CONFIGURE A CURRICULUM CORE SWITCH

In this format, the majority of the ports in Unit 1 would be designated for Curriculum use. In the diagram below, the ports are as follows:

**Unit 1:**
- Port 1: Purple, Link to router
- Port 2: Black, Trunk to second switch (Admin)
- Port 3: Green, DMZ
- Port 4-24: Red, Curriculum

**Unit 2:**
- Port 1: Red, Trunk to Unit 1
- Port 2-24: Red, Admin

---

**Note:** Port 2 on Unit 1 and Port 1 on unit 2 don’t have to be tagged as the connection is only carrying the Admin VLAN and so all ports on switch 2 will, by default, be Admin ports.

1. From the main menu, enter `{b}{v}` and then `{m}` to display the Modify menu

   ```
   Menu options: ------------------- 3Com SuperStack 3 Switch 4200 ---
   addPort - Add a port to a VLAN
   name - Name a VLAN
   removePort - Remove a port from a VLAN
   Type "quit" to return to the previous menu or ? for help
   Select menu option (bridge/vlan/modify):
   ```

2. Enter `{a}` to add a port

3. By default all ports are initially a member of VLAN1 and untagged so you will not need to add any ports to VLAN1

4. Enter `{200}` to select the Curriculum VLAN

5. As this is going to be an Curriculum Core switch, the majority of the ports are going to be added to the Curriculum VLAN. Enter `{1:4-24}` to select these ports

   ```
   Select menu option (bridge/vlan/modify): a
   Select VLAN ID (1.100.200.300): 200
   Select bridge ports (ALL-ALL,unit:port...,?): 1:4-24
   Enter tag type (untagged,tagged): u
   ```

6. The process may take a minute or so in which time nothing will happen.
7. When the prompt returns, enter \{m a\}.

8. Enter \{100\} for the Admin VLAN.

9. Remember that you are working on Unit 1 in this exercise (Unit 2 is for clarification purposes only) so enter \{1:2\} to select port 2.

10. Enter \{u\} for an untagged port

   \[
   \text{Select menu option (bridge/vlan/modify): a} \\
   \text{Select VLAN ID (1,100,200,300)11: 100} \\
   \text{Select bridge ports (ALL-AL4,unit:port...?): 1:2} \\
   \text{Enter tag type (untagged,tagged): u}
   \]

11. The last port to assign is port 3 to the DMZ. When the prompt returns, enter \{m a\}.

12. Enter \{300\} for the DMZ VLAN.

13. Enter \{1:3\} to select port 3 and \{u\} for an untagged port

   \[
   \text{Select menu option (bridge/vlan/modify): a} \\
   \text{Select VLAN ID (1,100,200,300)11: 300} \\
   \text{Select bridge ports (ALL-AL4,unit:port...?): 1:3} \\
   \text{Enter tag type (untagged,tagged): u}
   \]

14. Before proceeding it is best to check your results.

15. Press [Esc]

16. Enter \{b v det a\} to display the following summary page

<table>
<thead>
<tr>
<th>VLAN ID: 1</th>
<th>Name: Default VLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Untagged Member Ports</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Aggregated Links: ALL-AL4</td>
</tr>
<tr>
<td>VLAN ID: 100</td>
<td>Name: Admin</td>
</tr>
<tr>
<td>Unit</td>
<td>Untagged Member Ports</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Aggregated Links: none</td>
</tr>
<tr>
<td>VLAN ID: 200</td>
<td>Name: Curriculum</td>
</tr>
<tr>
<td>Unit</td>
<td>Untagged Member Ports</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Aggregated Links: 4-24</td>
</tr>
<tr>
<td>VLAN ID: 300</td>
<td>Name: DMZ</td>
</tr>
<tr>
<td>Unit</td>
<td>Untagged Member Ports</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Aggregated Links: none</td>
</tr>
</tbody>
</table>

17. If there are no errors in your port summary, this switch is ready to be connected to the network.

---

7 If you are confident with the command structure, you could concoct all the individual entries into \{m a 300 1:3 u\} which would add this port from one command.
CREATE A DUAL VLAN TRUNK

A dual VLAN trunk would be used where both VLANS 100 and 200 needed to be carried from the core managed switch to a second switch to which both admin and curriculum computers are going to be connected.

This would be achieved by designating a port on both switches as being a tagged member of both VLAN 100 and 200 and then creating the untagged memberships on the second switch.

For example, the current configuration may be as shown in the example above where Unit 2 is currently only a Curriculum switch but needs have changed and it now needs to also have two Admin ports (Ports 2 and 3) assigned as shown below.

In general terms the stages are:

**On the core switch:**
1. Delete an existing port from all VLANS
2. Add this port to VLAN 100 and 200 as a tagged port

**On the second switch:**
3. Delete an existing port from all VLANS
4. Add this port to VLAN 100 and 200 as a tagged port
5. Add the required port to VLAN 100 as an untagged port
6. Add the required ports to VLAN 200 as an untagged port

---

8 A typical example of the use of this configuration is where an Assistant Principal or Co-ordinator needs access to EDSAS but is physically located in a building outside the normal administration network or where all the admin data points have been used in the core switch and more are needed for admin purposes.
The process to achieve this would be as follows:

**On Unit 1:**

1. Open a hyper terminal connection

   ![Note: You may need to delete a port from an existing VLAN if all ports are being used or if port 2 is in use. Port 24 is often used for this purpose.]

2. Enter `{v m a}` to display the Add Port menu
3. Enter `{100}` to select VLAN 100 (the admin VLAN)
4. Enter `{1:2}` for the unit and port detail (or another port to suit your environment)
5. Then tag the port by entering `{t}`

   ```
   Select menu option (bridge/vlan/modify): a
   Select VLAN ID (1,100,200,300)?: 100
   Select bridge ports (ALL-ALL,unit:port,...?): 1:2
   Enter tag type (untagged,tagged): t
   ```

6. Port 2 also needs to be changed to a tagged member of VLAN 200 (Curriculum)
7. Enter `{m}` to display the modify menu
8. Enter `{200}` to select VLAN 200 (the Curriculum VLAN)
9. Enter `{1:2}` for the unit and port detail
10. Then tag the port by entering `{t}`

   ```
   Select menu option (bridge/vlan/modify): a
   Select VLAN ID (1,100,200,300)?: 200
   Select bridge ports (ALL-ALL,unit:port,...?): 1:2
   Enter tag type (untagged,tagged): t
   ```

11. Press `[Esc]`
12. List a summary of the ports by entering `{v det a}`

<table>
<thead>
<tr>
<th>VLAN ID</th>
<th>Name</th>
<th>Untagged Member Ports</th>
<th>Tagged Member Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Default VLAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Admin</td>
<td>1.24</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aggregated Links</td>
<td>none</td>
</tr>
<tr>
<td>200</td>
<td>Curriculum</td>
<td>1-2</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VLAN ID: 1</td>
<td>VLAN ID: 200</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Untagged Member Ports</td>
<td>Tagged Member Ports</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4-23</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aggregated Links</td>
<td>none</td>
</tr>
</tbody>
</table>

13. The summary should be similar to that shown above. The important elements are that there are two tagged member ports in VLANs 100 and 200. Port 1 is the router link and port 2 will go to the second unit. If you are configuring an Admin core switch the tagged member ports may display slightly differently.

14. The second switch can now be configured.
On Unit 2:

1. Open a hyper terminal connection
2. To see if VLANs have been configured, from the main menu, enter \{b v su a\} to display any existing VLANs.

```
<table>
<thead>
<tr>
<th>VLAN ID</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Default VLAN</td>
</tr>
<tr>
<td>200</td>
<td>Curriculum</td>
</tr>
</tbody>
</table>
```

- indicates management VLAN

3. Here we only have two VLANs and will need to create the Admin VLAN. Your process may be slightly different but you should be able to follow these steps fairly easily.
4. Press [Esc]
5. Enter \{b v \} to create a new VLAN
6. Enter \{100 Admin\} for the VLAN details

```
Select menu option (bridge/vlan): c
Select VLAN ID (2-4094)[21: 100
Enter VLAN Name [VLAN 100]: Admin
```

7. Press [Esc] to return to the main menu.
8. So that you can see which ports need to be changed, display the existing structure by entering \{b v det a\}

```
<p>| VLAN ID: 1 | Name: Default VLAN |</p>
<table>
<thead>
<tr>
<th>Unit</th>
<th>Untagged Member Ports</th>
<th>Tagged Member Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aggregated Links</td>
<td>ALL-AL4</td>
</tr>
</tbody>
</table>

<p>| VLAN ID: 100 | Name: Admin |</p>
<table>
<thead>
<tr>
<th>Unit</th>
<th>Untagged Member Ports</th>
<th>Tagged Member Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>none</td>
<td>none</td>
</tr>
</tbody>
</table>

<p>| VLAN ID: 200 | Name: Curriculum |</p>
<table>
<thead>
<tr>
<th>Unit</th>
<th>Untagged Member Ports</th>
<th>Tagged Member Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aggregated Links</td>
<td>none</td>
</tr>
</tbody>
</table>
```

9. You can see here that all but port 1 is a member of VLAN 200.
10. Port 1 needs to be a tagged member of VLANS 100 and 200 and ports 2 and 3 need to be moved to VLAN 100.
11. Press [Esc]
12. Enter \{b v m\} and \{a\} to display the add port options
13. Enter \{100\} \{1:1\} and \{t\} make it a tagged member of VLAN 100

```
Select menu option (bridge/vlan/modify): a
Select VLAN ID (1,100,200)[1: 100
Select bridge ports (ALL-AL4,unit:port...?): 1:1
Enter tag type (untagged,tagged): t
```
14. Enter \{m\} and \{a\} to display the add port options

15. Enter \{200\} \{1:1\} and \{t\} make it a tagged member of VLAN 200

```plaintext
Select menu option (bridge/vlan/modify): a
Select VLAN ID (1,100,200)(1): 200
Select bridge ports (A1-A14,unit:port....?): 1:1
Enter tag type (untagged,tagged): t
```

16. Now to remove ports 2 and 3 from the Curriculum range and add them to Admin. Press [Esc]

17. Enter \{b v m r\} to display the Remove menu

18. Enter \{200\} and then \{1:2-3\}

```plaintext
Select menu option (bridge/vlan/modify): r
Select VLAN ID (1,100,200)(1): 200
Select bridge ports (unit:port....?): 1:2-3
WARNING: Ports 1:2-1:3 are no longer members of any VLANs.
```

19. These ports are no longer a member of any VLAN.

20. They can now be added to VLAN 100. Press [Esc]

21. Enter \{b v m a\} to display the add menu

22. Enter \{100\} \{1:2-3\} and \{u\} to make these two ports untagged members of VLAN 100

```plaintext
Select menu option (bridge/vlan/modify): a
Select VLAN ID (1,100,200)(1): 100
Select bridge ports (A1-A14,unit:port....?): 1:2-3
Enter tag type (untagged,tagged): u
```

23. Verify the new port structure by pressing [Esc] and entering \{b v det\} and \{a\}

<table>
<thead>
<tr>
<th>VLAN ID: 100</th>
<th>Name: Admin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Untagged Member Ports</td>
</tr>
<tr>
<td>------</td>
<td>-----------------</td>
</tr>
<tr>
<td>1</td>
<td>Aggregated Links</td>
</tr>
<tr>
<td></td>
<td>none</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VLAN ID: 200</th>
<th>Name: Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Untagged Member Ports</td>
</tr>
<tr>
<td>------</td>
<td>-----------------</td>
</tr>
<tr>
<td>1</td>
<td>Aggregated Links</td>
</tr>
<tr>
<td></td>
<td>none</td>
</tr>
</tbody>
</table>

24. Ports 2 and 3 should now be untagged members of VLAN 100 and Ports 4-24 members of VLAN 200. Port 1 is the tagged trunk to Unit 1 which is the managed cores switch.

25. So that this switch can be managed via the web interface, you may want to set up its IP details within the sites managed IP range.
DESIGNATE A MANAGEMENT PORT

If you want to connect a laptop to the switch for management purposes⁹, one of the ports will need to be added to VLAN1. This will be a Management Port and is set up as follows. These instructions assume that the switch has been set up according to the previous pages and is a Curriculum Core Switch (refer to page 12 to see how this is done).

This process involves removing a port (we will use port 24 on unit 1) that is not being used from the Curriculum VLAN and adding it to the management VLAN which is VLAN1.

1. Open a hyper terminal connection
2. From the main menu, enter {b}{v} and then {m} to display the Modify menu
3. Then {r} to remove a port from an existing VLAN
4. As our example is being done on a Curriculum core switch we will enter {200}. If you are using an Admin core switch, you would enter {100}.
5. Enter {1:24} to delete the port. If you get an error message then you have not selected the correct VLAN or this port was never a member of the VLAN.

   Select menu option (bridge/vlan/modify): r
   Select VLAN ID (1,100,200,300)111: 200
   Select bridge ports (unit:port,...,?): 1:24
   WARNING: Ports 1:24 are no longer members of any VLANs.

6. Now to add it to VLAN1.
7. Enter {m} and {a}
8. Enter {1} for VLAN 1
9. Enter the port detail of {1:24} and {u} for untagged

   Select menu option (bridge/vlan/modify): a
   Select VLAN ID (1,100,200,300)111: 1
   Select bridge ports (ALL-NONE,unit:port,...,?): 1:24
   Enter tag type (untagged,tagged): u

10. If you plug a laptop to Port 24 with a cross over cable you should now be able to log onto the switch using the web interface (refer to page 19)

---

⁹ This facility would not be necessary if you have set up the correct management IP addresses on all the switches that have VLANs and have ensured that the tagged ports have VLAN 1 also assigned as tagged which allows VLAN 1 to go from switch to switch
WEB INTERFACE

Connection – Admin workstation

1. Logon to an admin workstation
2. Into the Internet explorer address bar, enter the address of the switch
3. If the connection is successful, you will be asked to authenticate the logon.
4. Enter the username of {manager} and the manager {password}
5. The standard interface will be displayed.

---

Connection - Laptop

1. Plug a cross-over cable into the switches management port and into the back of the laptop. If you are not sure if there is one, refer to page 18 on how this can be set up.
   
   Make sure that you have an IP address on your laptop network card that is within the administration range for this switch.

2. Into the Internet explorer address bar, enter the address of the switch
3. If the connection is successful, you will be asked to authenticate the logon.
4. Enter the username of {manager} and the manager {password}
5. The standard interface will be displayed.
Display Ports on a VLAN

1. From the standard interface, select the [Device View] tab
2. Then from the menu in on the left, navigate to the [Bridge/VLAN] section

3. Expand out the VLAN link and select [Display/Edit]

4. A new window listing the available VLANS will be displayed.

5. Highlight a VLAN listing and press [VLAN Detail]
6. A list of ports in that VLAN will be displayed.

7. This window is very handy for quickly verifying that the ports are configured correctly. To see another VLAN detail, select it from the drop-down list at the top of the window.
FIRMWARE UPGRADE TO 4.1

Depending on the firmware version that was supplied with the switch you may need to complete a firmware upgrade.

Confirm the current version

1. Open an active hyper terminal session
2. From the main menu enter `{sys}` to display the System Summary window.

<table>
<thead>
<tr>
<th>Location</th>
<th>Room 6 - Cabinet B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact</td>
<td>Paul Warneke</td>
</tr>
<tr>
<td>Time Since Reset</td>
<td>0 Hrs 20 Mins 10 Seconds</td>
</tr>
<tr>
<td>Operational Version</td>
<td>4.10</td>
</tr>
<tr>
<td>Hardware Version</td>
<td>04.01.01</td>
</tr>
<tr>
<td>Boot Version</td>
<td>2.01</td>
</tr>
<tr>
<td>MAC Address</td>
<td>00-05-1a-79-3d-00</td>
</tr>
<tr>
<td>Product Number</td>
<td>3C17203</td>
</tr>
<tr>
<td>Serial Number</td>
<td>7PVVBJ6793000</td>
</tr>
<tr>
<td>TFTP Server Address</td>
<td>0.0.0.0</td>
</tr>
<tr>
<td>Last software upgrade</td>
<td>No response from server</td>
</tr>
<tr>
<td>The last attempt to save the configuration failed.</td>
<td></td>
</tr>
<tr>
<td>Failure Reason</td>
<td>No Response from Server</td>
</tr>
<tr>
<td>TFTP Server address</td>
<td>10.101.38.165</td>
</tr>
<tr>
<td>Filename</td>
<td>3comtest</td>
</tr>
<tr>
<td>Module Slot 1</td>
<td>No module fitted</td>
</tr>
<tr>
<td>Module Slot 2</td>
<td>No module fitted</td>
</tr>
</tbody>
</table>

3. This switch came with version 4.1 installed and would not need to be upgraded.

Open a TFTP session

1. Insert the eduConnect Resource Kit CD
2. If the CD does not automatically display the eduConnect menu, navigate to the CD and double-click [autorunPro] in the root directory of the CD to display the menu.
3. Click the [Apps and Utilities] button
4. Then the [Start TFTP Server] button to open the FTP server

![Tftp32 by Ph. Jouini](image)

5. Write down the [Server Interface] IP address. ¹⁰
6. Using the [Browse] button, locate navigate to the folder [cdrom:\tftp32]

![Browse for Folder](image)

7. Press [OK]
8. Do not close the TFTP Server, but you can minimise it to the taskbar.

**Perform the Upgrade**

1. Connect a crossover cable between your laptop and a management port¹¹ on the switch.
2. Open a browser window and enter the (ip address) of the switch into the address bar.

![Browser](image)

3. If a window is not displayed asking for a user name and password, you will have to change your internet explorer settings. Remove the proxy and port settings from Internet Explorer, Tools, Lan Settings. Close the browser window and return to step 2 and try again.

¹⁰ Each site has a designated management IP range which will vary from their Admin and Curriculum ranges. Contact the CSC if you are not sure of these details. Change your laptops IP and subnet masks to fall within this range before starting the TFTP server.

¹¹ Unless you have added another port to VLAN1 which is the management VLAN, the only port available will be port 1 which connects the router and the switch. Port 1 can be used but disconnecting the router will deny internet access to any users during the firmware upgrade process.
4. Enter the user name \texttt{manager} and the admin \texttt{password}.

![Connection to 10.86.156.4](image)

5. Press \texttt{OK}.
6. From the page displayed, select the \texttt{Device View} tab.

![Device View](image)

7. Then expand out the \texttt{System/Control} directory trees.

![System/Control](image)

8. Click the \texttt{Software Upgrade}.
9. Enter the firmware file name of \texttt{s3m4_10.bin}. 

---

Nov 2005 24 Compiled by Kaye Walter and Paul Warneke
10. Into the window that displays, enter the \{IP address\} you noted earlier when starting the TFTP server

![Software Upgrade - Microsoft Internet Explorer](image)

**Using the Hyper terminal Interface:**

1. Open a hyper terminal connection
2. Enter \{sys c s\}
3. Enter the \{TFTP IP\} that you noted earlier
4. Enter the file name of \{s3m4_10.bin\}

```
Select menu option (system/control): so
TFTP Server Address [0.0.0.0]:10.86.156.2
File Name... \{s3m4_10.bin\}
```

5. The upgrade will commence and take a few minutes without any change to the screen. Be patient.

```
TFTP Server Address [0.0.0.0]:10.86.156.2
File Name... \{s3m4_10.bin\}
Software Upgrade has begun...
```

6. When the upgrade has finished you will need to log in again.
7. You may get an update warning message, wait for the system to continue.

```
WARNING: The device is currently initializing the SSH host key pair. This may take some minutes, during which time device management may be slower than normal.
```

8. To confirm the firmware upgrade, from the main menu enter \{sy s\}
9. The updated firmware should show in the summary screen.
MAKING MINOR CHANGES

Change the IP address

1. From the main hyper terminal menu enter {pr i b m} to display the IP entry section
2. Enter the new IP address, subnet mask, default gateway and management VLAN

```
Enter configuration method (auto, manual, none) [manual]: m
Enter IP address [10.101.38.162]:
Enter subnet mask [255.255.255.224]:
Enter gateway IP address [10.101.38.161]:
Select management VLAN ID (1,100,200,300) [1]:
```

3. Press [Esc] to return to the top menu.

Change the Unit Name

1. From the main hyper terminal menu enter {sys m n} to display the Name entry section
2. Enter the {Unit Name}

```
Type ? for help
--------------------Loan Switch, DECS 4400 (1)----
Select menu option: sys m n
Enter system name [Loan Switch]: Rack A
```

3. Press [Esc] to return to the top menu.

Enable Spanning Tree

1. If this site uses Macs, do not enable Spanning Tree if it was disabled.
2. From the main hyper terminal menu enter {b sp} to display the Spanning Tree menu

```
Menu options: -------------------3Com SuperStack 3 Switch 4400-------------------
stsDefaultPathCost - Set the bridge Spanning Tree default path costs
stsForwardDelay - Set the bridge Spanning Tree forward delay parameter
stsHelloTime - Set the bridge Spanning Tree hello time parameter
stsMaxAge - Set the bridge Spanning Tree maximum age parameter
stsPriority - Set the bridge Spanning Tree priority parameter
stsState - Enable/disable Spanning Tree on a bridge
stsVersion - Select the version of Spanning Tree to run on a bridge
```

3. Enter {stps} to select the option to enable/disable the service
4. Enter {e} to enable Spanning Tree

```
Type "quit" to return to the previous menu or ? for help
----------------------Loan A, DECS 4400 (1)-----
Select menu option (bridge/spanningTree): stps
Enter new value {enable,disable}enable: e
```

5. Spanning Tree will now be enabled
Enable IGMP Snoop

1. From the main hyper terminal menu enter {b m i s} to display the Snoop entry section
2. Enter the {e} to enable IGMP Snoop

```
Type ? for help
----------------------------------------Rack A, DECS 4400 (1)---
Select menu option: b m i s
Enter new value {enable,disable}[disable]: e
```

3. Snoop will now be enabled

Enable Broadcast Storm Control

1. From the main hyper terminal menu enter {b b} to display the Broadcast Storm entry section
2. Enter the {e} to enable storm control
3. Press [Enter] to accept the default threshold level of 3000

```
Type “quit” to return to the previous menu or ? for help
----------------------------------------Rack A, DECS 4400 (1)------
Select menu option (bridge): b
Enter new value {enable,disable}[enable]: e
Enter threshold in pps (0-200000){3000}: e
```

4. Broadcast storm control will now be enabled