



Release Notes for NETLAB Academy Edition

Version 4.0

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Release Notes for NETLAB Academy Edition Version 4.0

NETLAB+ Version 4.0 is a major software upgrade focused on global resource sharing. Version 4.0 features a new account management model and access controls that allows your NETLAB+ system to be shared among multiple organizations. This release also includes beta versions of two new features, Lab Designer and Pod Designer.

NDG recognizes the challenge of budget constraints faced by many academies. To help with this challenge the NETLAB Academy Edition® License and Support agreement allows Academies to share access to a NETLAB_{AE} system with other Academies that cannot afford the cost of ownership for their own system. If three or more schools share access to a NETLAB_{AE} system, the cost per student is significantly reduced and the potential for lab access rises significantly.

In version 3.7.5, NDG introduced the [sharing portal](#). The portal allows hosting Academies to advertise their willingness to share with potential guest Academies.

Version 4.0 provides the security and tools to implement organized, large-scale sharing. In prior versions, instructors were trusted and expected to respect other instructors, students, classes, and lab reservations. Many Academies felt that additional access controls were needed before offering access to other Academies. Version 4.0 implements a new security model to address this concern.

Summary of New Features

Version 4.0 implements many commonly requested features.

- The NETLAB+ administrator can create independent user *communities* to control pod access and confine instructor privileges to smaller groups.
- The administrator can delegate account creation responsibilities to community leaders.
- An instructor can only manipulate classes which they lead, unless granted higher level privileges by the administrator.
- Students can now belong to multiple classes.
- A class now supports both individual self study AND team study. In the previous version, you had to select one or the other.
- More than one instructor can *lead* a class. Previously there was only one primary instructor.
- The class *roster* can now contain both students and instructors. Instructors may act in a teaching role (leads) or learning role (members). This may be useful for retooling and *train-the-trainer*.
- Member of a class roster can be copied or moved to another class.
- A new account manager allows operations on multiple accounts.
- The lab catalog only shows labs that can be performed based on the available pod types.

- Starting and ending dates for a class are now optional. The default for new classes is 'none'.
- File manager now implements a shared directory for each class. Instructors may share configurations with members of the class.
- File manager now supports copying of configuration files between folders.
- New users are prompted for new password, time zone and email address when they login for the first time.
- Text on the login page can be customized by the administrator.
- News and/or announcements on the MyNETLAB page can be established at the system or community level.
- The administrator can now manage all accounts and classes from the administrator account.

Caveats

- There is no automated feature to migrate users and/or classes from one community to another. We apologize for any inconvenience this may cause. Adding such a feature would have significantly delayed the 4.0 release. To migrate existing users and classes, you should create new classes and accounts in the new community, and then delete the old ones from the original community. The administrator can delegate account creation responsibilities to designated community leaders.
- Access controls now limit what instructors can and cannot do. Please see the discussion below.
- Files in the file manager are now private. Users can no longer view and/or modify another user's personal configuration files. However an instructor can still analyze their student's lab work and final configurations using the archive feature.
- The Archive feature only displays classes for which an instructor is a lead.
- Pod *rules* are now based on communities. Instructor based pod restrictions are no longer supported, and will be deleted upon upgrade.
- Since student accounts are no longer tied to a single class, some account related settings (such as initial password) have been moved from the class manager to the account manager.

Communities

A *community* is a distinct group of instructors, students, and classes. Communities act like containers. Instructors may only manage students and classes within their own community (unless they are granted system-wide privileges by the administrator).

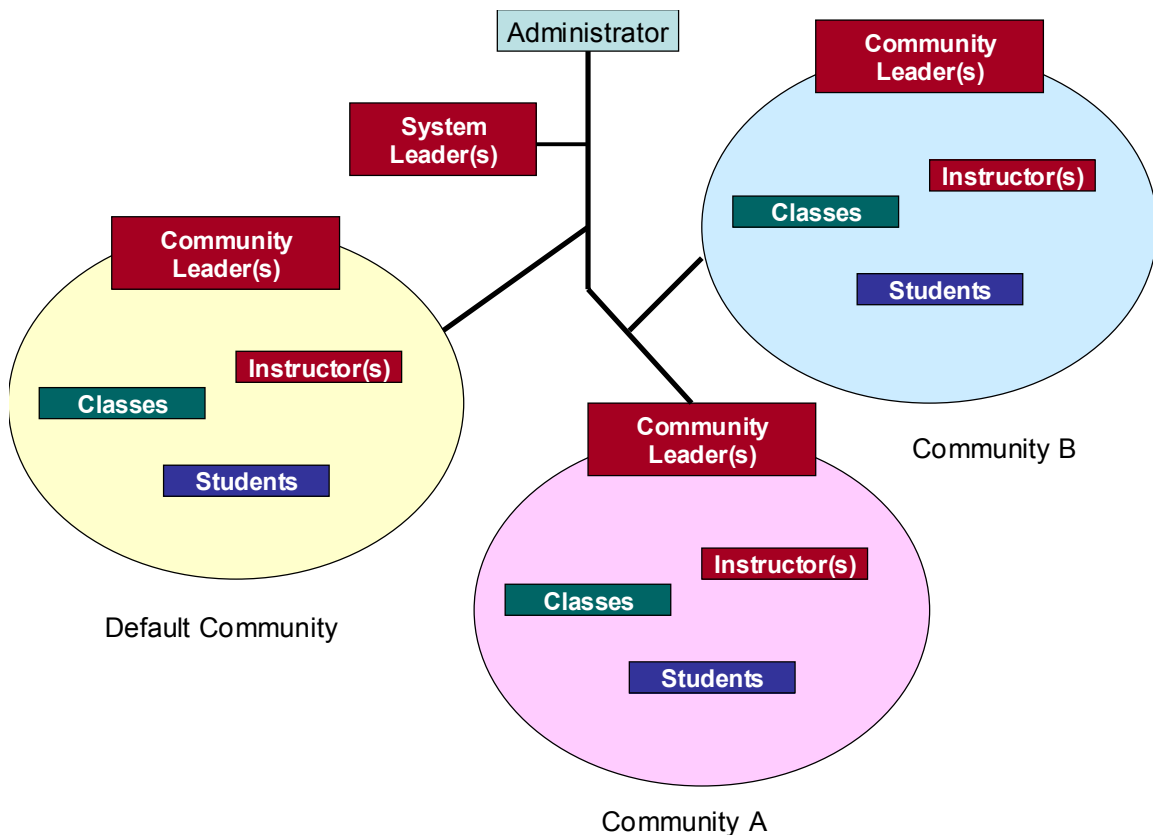
Communities are useful when more than one logical group of users share a system. Blocks of time on equipment pods may be allocated by community to ensure that each community receives a predetermined share of lab resources.

A hosting Networking Academy® may create one community for each guest Academy and allocate pod time based on a cost recovery model.

Multiple communities are optional. Keep in mind that each instructor, student and class can belong to only one community. If you do not wish to use communities, place all accounts and classes in the *default* community. When a NETLAB+ system is upgraded from version 3 to version 4, all accounts will be migrated to the default community.

Communities add a fourth layer of management to NETLAB+. In NETLAB+ version 3, there were three levels of management. The system administrator may create a communities and delegate management responsibility to one or more community leaders (an instructor account with *community-wide* privileges). Instructors and students in a community cannot manage and/or interfere with members of a different community.

An instructor can also be granted *system-wide* management privileges, allowing the instructor to manage accounts and classes in different communities without accessing the system administrator account.



Pod Rules

In version 3.X, pod access could be limited by instructor. This feature has been phased out in favor of community-based pod rules in version 4.0.

Pod rules can be established to restrict equipment pod access by community and time of day. This is useful in a sharing arrangement where a community (or Academy) is contributing towards cost recovery in return for guaranteed access to one or more pods.

This feature can be used to grant dedicated access to one or more communities at certain times. It can also be used to limit a community's access to specific times.

Elements of a Pod Rule

The screenshot shows a configuration window titled "Pod Rules" with a menu bar containing "Admin", "Logout", and "Help". The main area contains the following fields:

- Pod:** A dropdown menu showing "POD 1 - Basic Router Pod (Version 2)".
- Community:** A dropdown menu showing "XYZ Technical College".
- Days of Week:** A list of days with checkboxes: Sunday (unchecked), Monday (unchecked), Tuesday (unchecked), Wednesday (checked), Thursday (checked), Friday (checked), and Saturday (checked).
- Time Zone:** A dropdown menu showing "(GMT-05:00) Eastern Time (US & Canada)".
- Start Time:** A dropdown menu showing "0900" with "(hhmm)" next to it.
- End Time:** A dropdown menu showing "1500" with "(hhmm)" next to it.
- Scope:** Two radio buttons: "unlimited (do not restrict community to specified time)" (unchecked) and "limited (restrict community to specified time)" (checked).

At the bottom, there are two buttons: "OK" (with a green checkmark icon) and "Cancel" (with a red X icon).

Pod. Each rule may target a single pod, or all pods.

Community. Each rule targets a single community. Multiple communities can be targeted by creating an overlapping rule for each.

Days of Week. The days of the week to apply the rule.

Start/End Time. The start and end time to apply the rule, relative to the specified time zone.

Time Zone. The time zone of the specified start and end time. Pod rules are automatically adjusted on the scheduling calendar for users in different time zones. We recommend setting each rule to the same time zone, such as the local time zone of the system or administrator. The time zone may be subject to daylight savings time - please see below for further explanation.

Scope. A rule scope can be *limited* or *unlimited*. A limited scope times not bound by a rule. See below for further explanation.

Understanding Pod Rules

1. Pod rules apply to communities. To limit pod access, users and classes must first be organized into communities. By default, there is only one *default* community.
2. Without a pod rule, a user in any community may reserve the pod at any time of day (unless restricted by a class profile). This is the default behavior.
3. When a pod rule is applied, a pod becomes dedicated to users in the specified community during the specified times. In other words, the community specified in the rule is permitted, while all other communities are denied. By creating overlapping rules, you may grant access to several communities.
4. Each rule has one start and end time. Multiple pod rules can be created if more than one contiguous block of time is required. For example, suppose the default community should be allowed access to pod 1 every day from 9am to 11am, and also from 7pm to 11pm. Two rules are needed to achieve this, one for each time range.
5. The scope of a pod rule can be *limited* or *unlimited*.
 - a. A *limited* scope allows a community to access the pod ONLY on the specified days and times. Use this scope if you want the community to have pod access only at designated times.
 - b. An *unlimited* scope allows a community to access the pod on the specified days and times, AND all other times not restricted by a pod rule. Use this scope type if you want to dedicate pod access to a community at certain times, but not restrict them during other times.

Time Zones and Daylight Saving Time

If you choose a time zone that observes daylight savings time, the start and end time of a rule may appear to shift to users in other time zones, or in a time zone that does not observe daylight savings time. This may be desirable or undesirable depending on your goals. To avoid shifts due to daylight savings time, consider using the Greenwich Mean Time zone selection and adjust the start and end time accordingly.

New Security Model

Many Academies felt that additional access controls were needed before offering access to other Academies. Version 4.0 implements a new security model to address this concern.

In version 3.X, instructors had free reign over the entire system. Version 4.0 now provides three levels of privilege for instructors.

Normal Instructor Privileges

- Can create and manage student accounts in their community.
- Can create and manage classes for which they are a lead.
- Can cancel lab reservations made by students in their classes.
- Cannot manage other instructor accounts.

Community-Wide Instructor Privileges (Community Leader)

- Can create and manage student accounts in their community.
- Can create and manage instructor accounts in their community.
- Can create and manage any classes in a community.
- Can attend all lab reservations in their community (except instructor personal reservations)
- Can cancel lab reservations made by instructors and students in their community.

System-Wide Instructor Privileges (System Leader)

- Can create and manage student accounts in any community.
- Can create and manage instructor accounts in any community.
- Can manage classes in any community.
- Can attend all lab reservations in any community (except instructor personal reservations)
- Can cancel any lab reservation.

Please note: Only the system administrator can grant community-wide or system-wide privileges to an instructor account.

What to Expect When Migrating from 3.X to 4.0

	In Version 3.X...	When Migrating to Version 4.0...
Communities	There are no communities.	All accounts and classes will be placed in the default community. Creating additional communities are optional.
Student Accounts	Tied to one class.	Will remain in same class, but can be subsequently added to additional classes.
Instructor with normal privileges	Can manipulate any class and student account.	Can manipulate their own classes, and student accounts within their own community.
"Super Instructor"	Can create other instructor accounts.	This privilege is phased out. Super instructors are converted to community-wide instructors upon upgrade.
Instructor with system-wide privileges	There is no equivalent privilege.	Must be granted this privilege by the administrator.
Class Leads	There is one designated instructor per class.	Designated instructor will become a class lead. Additional leads may be subsequently added to the class.
Instructor Roles	Instructors always act in teaching role.	Instructors may act in teaching role (class lead) or learning role (class member). The migration process will only move student accounts into the class roster. You must manually add Instructors to a class roster to place them in a learning role.

Beta Release of Lab Designer and Pod Designer Features

NDG is pleased to include two additional new features, **Lab Designer** and **Pod Designer**. Use of these tools will greatly enhance your ability to customize your NETLAB+ system to meet your Academy's needs. The current beta release of these features has been included to provide an opportunity for your Academy to evaluate these tools and provide NDG with feedback. We encourage and greatly appreciate your participation in this endeavor.

Please Note: Only limited support and documentation are available for these features during the beta period.

Lab Designer

The Lab Designer provides a means of creating a series of custom laboratory exercises that may be made available for class use. The Lab Designer tool allows input of user-supplied information that may include documentation files (PDF, DOC, RTF or TXT format), images (GIF, JPEG or PNG format) and configuration files for each lab exercise.

You may select one of your current Academy pod topologies, or a custom pod that has been installed on your system using the **Pod Designer** (see below).

The Lab Designer builds a *Lab Design File* (*.nlx) which contains all user-supplied data. After a lab design file has been built and exported, it may be uploaded to the system by the Administrator and made available for use.

The screenshot displays the Lab Designer interface. At the top, there is a header with 'Lab Designer' and 'MyNETLAB Logout' on the left, and 'INSTRUCTOR' and a user icon 'jdoe2006' on the right. Below the header is a table listing lab exercises. The table has columns for Name, Build, Committed, Author ID, Global ID, File Size, and Last Modified (y-m-d h:m:s). The first row is 'Fall CCNA Class' with Build '1', Committed 'No', Author ID 'JDOE2006', Global ID '00C0_F06B_B5E7_44BA_64B4', File Size '618,062', and Last Modified '2006-07-16 19:14:02 UTC'. Below the table are tabs for 'General', 'Documents', 'Images', 'Configs', 'Labs', and 'Builds'. The 'General' tab is selected, showing 'General Settings' for the 'Fall CCNA Class' lab. The settings include Name, Description, Author, Organization, Copyright, Support URL, Note / Comment, Modification Password, Installation Password, Cloning Permitted, Cloning Password, Access, and Managed Content (NDG).

Name	Build	Committed	Author ID	Global ID	File Size	Last Modified (y-m-d h:m:s)
Fall CCNA Class	1	No	JDOE2006	00C0_F06B_B5E7_44BA_64B4	618,062	2006-07-16 19:14:02 UTC

General | Documents | Images | Configs | Labs | Builds

General Settings

Name	Fall CCNA Class
Description	Lab Exercises for Fall CCNA Class
Author	Jane Doe
Organization	Fictional Name University
Copyright	Copyright © 2006, Fictional Name University
Support URL	http://www.fictionalname.org/
Note / Comment	
Modification Password	not required
Installation Password	not required
Cloning Permitted	Yes
Cloning Password	not required
Access	Global
Managed Content (NDG)	No

Documentation files (PDF, DOC, RTF or TXT format) may be added to the lab design file and be associated with a lab exercise. A lab document may be associated with more than one lab exercise.

General Documents Images Configs Labs Builds

Documents

File Name	Type	Size	References	Remove
lab_1.1_intro.pdf	Adobe PDF Document	193,782	1	in use
lab_1.2_configuration.pdf	Adobe PDF Document	193,782	1	in use
lab_1.3_troubleshooting.pdf	Adobe PDF Document	193,782	1	in use




581,346 bytes in 3 file(s)

+ Add Document

Image files (GIF, JPEG or PNG format) may be created and added to the lab design file to reflect exercise-specific information. An image may be associated with more than one lab exercise. Alternatively, you may use the default image associated with the pod design. *Hotspots* are clickable regions that may be set to define areas on the topology image which may be selected to access the device represented during a lab reservation. See the Pod Designer section below for further discussion of hotspots.

General Documents Images Configs Labs Builds

Images

File Name	Type	Size	Hotspots	References	Remove
lab_1.1.gif	Graphic Interchange Format	9,952	 2 set	1	in use
lab_1.2.gif	Graphic Interchange Format	9,952	 none set	1	in use
lab_1.3.gif	Graphic Interchange Format	9,952	 3 set	1	in use

29,856 bytes in 3 file(s)

+ Add Image

Configuration folders may be added to the lab design file using the **Configs** tab. The configuration folder may be associated with more than one lab exercise.

General Documents Images Configs Labs Builds

Configs

Preset Configuration Folders

Folder Name	References	Remove
lab_1.1_example_config	1	in use
lab_1.2_config	1	in use

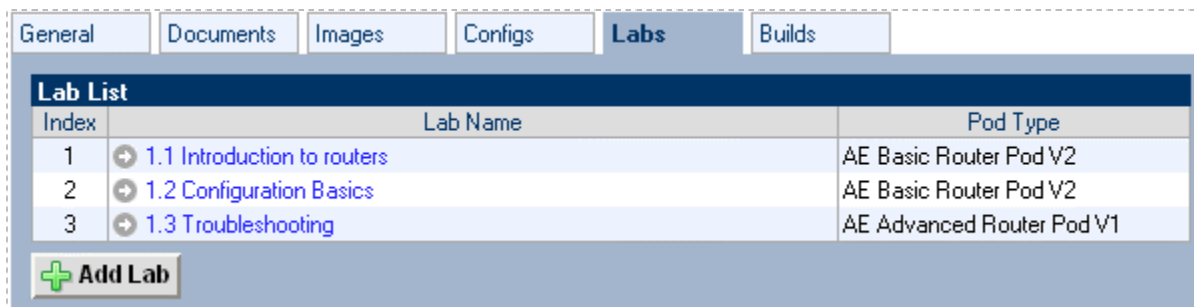
+ Add Config Folder

Configuration folders contain configuration files specific to the devices in the topology that can be loaded at the start of the lab reservation.




```
lab_1.1_example_config Router 1 Router 2 Router 3
! Router 1
!! hardware="C2621XM"
!
hostname Router1
!
no logging console
enable password class
!
username sdm privilege 15 password 0 sdm
!
no ip domain-lookup
!
ip dhcp excluded-address 10.0.1.1 10.0.1.11
!
ip dhcp pool POD1_INSIDE
network 10.0.1.0 255.255.255.0
default-router 10.0.1.2
!
interface FastEthernet0/0
```

A series of lab exercises are easily added to the lab design using the **Labs** tab. Each lab exercise may be assigned to any available pod-type.



Index	Lab Name	Pod Type
1	1.1 Introduction to routers	AE Basic Router Pod V2
2	1.2 Configuration Basics	AE Basic Router Pod V2
3	1.3 Troubleshooting	AE Advanced Router Pod V1

 Add Lab

Options are selected for each lab exercise. Lab documents, images and configuration folders may be associated with the lab exercise by selecting the appropriate settings on the page.

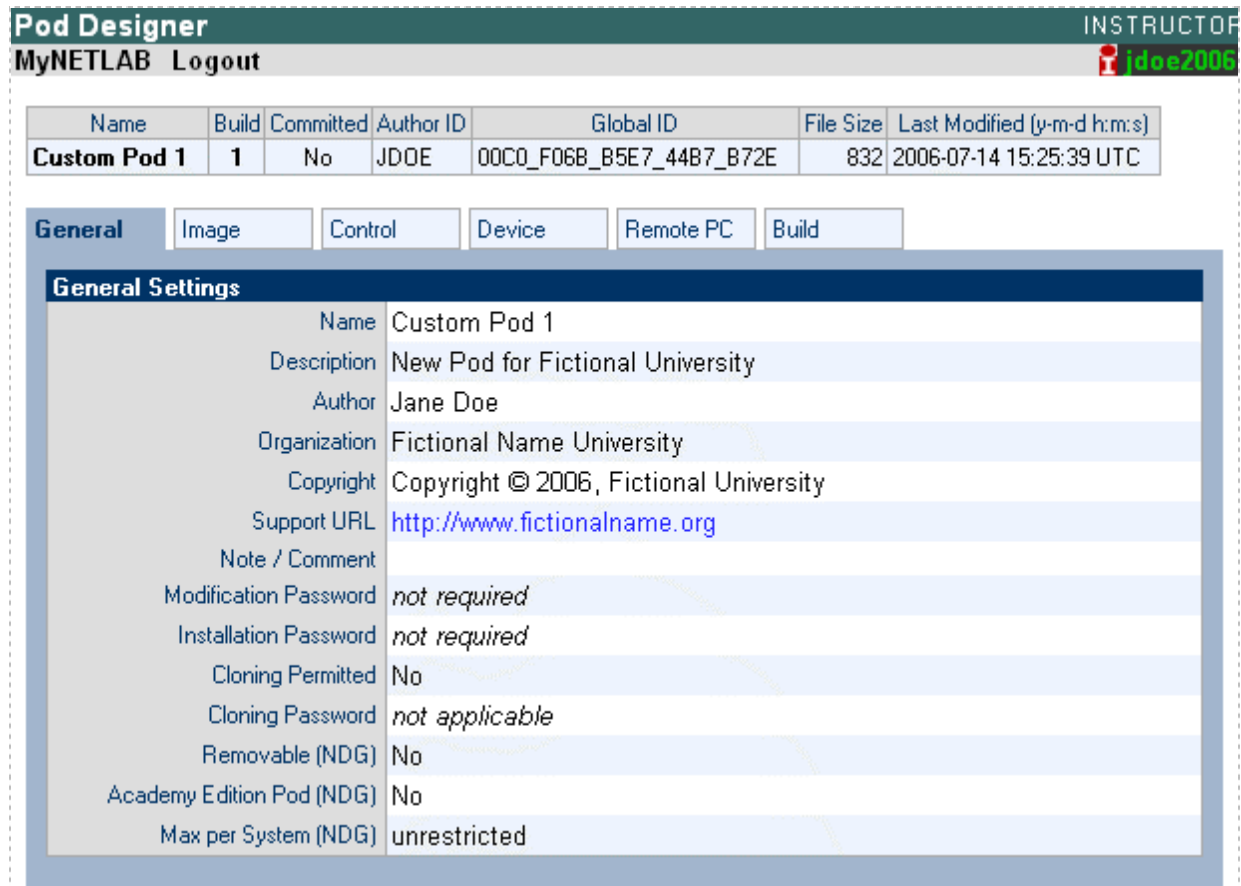
Lab 1.1 Introduction to routers	
Global Lab ID	JDOE2006_00C0_F06B_B5E7_44BA_64B4_0001
Index	1
Lab Name	1.1 Introduction to routers <small>(required)</small>
Pod Type	AE Basic Router Pod V2
Time Limit	50 minutes
Lab Document	lab_1.1_intro.pdf
Topology Image	lab_1.1.gif
Preset Configuration	lab_1.1_example_config
Assessment Options	<input checked="" type="checkbox"/> always load the specified preset configuration <input type="checkbox"/> disable lab preview feature <input type="checkbox"/> disable lab selection from ILT exercise tab <input type="checkbox"/> disable configuration load tab and features <input type="checkbox"/> disable configuration save tab and features <input type="checkbox"/> disable the action tab and its features <input type="checkbox"/> disable automated scrub feature from action tab <input type="checkbox"/> disable password recovery feature from action tab <input type="checkbox"/> disable power control features from action tab
VLAN Map	<input checked="" type="radio"/> use pod default <input type="radio"/> custom map
Alternate Device Names	<input checked="" type="radio"/> use pod device names <input type="radio"/> custom names

Pod Designer

The addition of the Pod Designer feature brings a whole new level of flexibility to the NETLAB+ system. The Pod Designer is used to create custom pods.

Please Note: The maximum number of pods that may be included on a single NETLAB Academy Edition system has been increased from 10 pods to 12 pods. NETLAB_{AE} allows a maximum of 2 of the 12 pods to be custom pods created with the Pod Designer.

The Pod Designer builds a *Pod Design File* (*.npd) which contains all user-supplied data. After a pod design file has been built, it may be installed in the NETLAB+ system database by the Administrator and made available for use. Pod design files may also be exported and installed on other NETLAB+ systems.



The screenshot displays the Pod Designer application window. At the top, it shows the title 'Pod Designer' and the user 'INSTRUCTOR idoe2006'. Below the title bar is a 'MyNETLAB Logout' button. A table lists pod details for 'Custom Pod 1'. Below the table are tabs for 'General', 'Image', 'Control', 'Device', 'Remote PC', and 'Build'. The 'General' tab is active, showing a 'General Settings' panel with various configuration options.

Name	Build	Committed	Author ID	Global ID	File Size	Last Modified (y-m-d h:m:s)
Custom Pod 1	1	No	JDOE	00C0_F06B_B5E7_44B7_B72E	832	2006-07-14 15:25:39 UTC

General | Image | Control | Device | Remote PC | Build

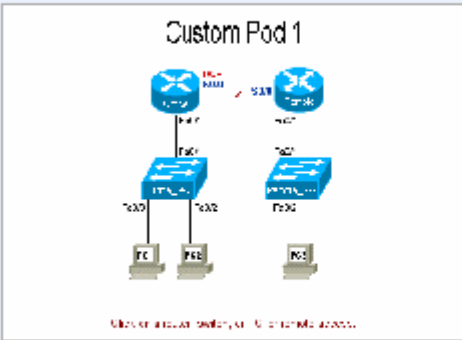
General Settings

Name	Custom Pod 1
Description	New Pod for Fictional University
Author	Jane Doe
Organization	Fictional Name University
Copyright	Copyright © 2006, Fictional University
Support URL	http://www.fictionalname.org
Note / Comment	
Modification Password	not required
Installation Password	not required
Cloning Permitted	No
Cloning Password	not applicable
Removable (NDG)	No
Academy Edition Pod (NDG)	No
Max per System (NDG)	unrestricted

The Pod Designer tool includes options to define image files (GIF, JPEG or PNG) to be used as the Default Topology Image (seen on the Topology Tab during a lab reservation) and Scheduler Image (thumbnail display on the Scheduler).

General **Image** Control Device Remote PC Build

Default Topology Image




Click image to enlarge

File Name	Type	Width	Height
custompod1.gif	GIF	550	400

Change Image Clear Image

Scheduler Image



File Name	Type	Width	Height
custompod1_sch.gif	GIF	200	50

Change Image Clear Image









All necessary control device settings are entered into the **Control** tab.


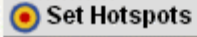
General Image **Control** Device Remote PC Build

Control Settings







Access Server Ports	4																
Switched Outlets	4																
Consecutive Control Switch Ports	5																
VLAN Pool	3																
Default VLAN Map	<table border="1"> <thead> <tr> <th>+0</th> <th>+1</th> <th>+2</th> <th>+3</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>VLAN A</td> <td>VLAN B</td> </tr> <tr> <td>+4</td> <td></td> <td></td> <td></td> </tr> <tr> <td>VLAN C</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	+0	+1	+2	+3	OFF	OFF	VLAN A	VLAN B	+4				VLAN C			
	+0	+1	+2	+3													
	OFF	OFF	VLAN A	VLAN B													
	+4																
VLAN C																	



Lab devices in the topology are defined on the **Device** tab section of the Pod Designer.

Devices									
Edit	Index	Type	Name	Hotspot	CS +	AS +	SO +	INX	Cables
	1		Office	176,73,235,132	0	0	0	No	view/set
	2		Remote	324,72,383,131	1	1	1	No	view/set
	3		Office_SW	165,181,244,232	2	2	2	No	view/set
	4		Remote_SW	313,182,392,232	4	3	3	No	view/set

Remote PCs are defined on the **Remote PC** tab.

Remote PC				
Edit	Index	Icon	Name	Hotspot
	1		PC1	147,281,196,331
	2		PC2	205,281,253,331
	3		PC3	331,281,377,332

Both the Pod Designer and Lab Designer feature a way to create *Hotspots* on topology images. Hotspots are clickable regions that may be set to define areas on the topology image which may be selected to access the device represented during a lab reservation. Hotspots are dragged onto the topology image and placed and sized by the user. In this example, hotspots have been set for the first 5 devices but have not yet been set for PC2 or PC3.

