

SIP.edu Workshop Tutorial

TAMU ITEC Lab

1. About BlueLava SIP.edu

BlueLava is a Debian Linux distribution developed by Pulver.com. Amongst other applications it contains SIP Express Router (SER) from IPtel and Asterisk Open PBX, which will be used in the setup of your SIP.edu server. Along with these two applications there have been several scripts written to expedite the setup process for the applications. BlueLava also comes with a straight forward web interface to assist in the management of these two packages. By the time you are done with this tutorial you will be able to have a working SIP server and SIP gateway all in one box. With the installation of a PRI to your PBX and a PRI card into your server you will be able to make calls to the rest of your extensions on your PBX.

2. Connect to the SIP.edu server

The lab utilizes the ser proxy and asterisk-based voice mail server.

The BlueLava server is configured using https

Page Name: <https://sipedu-univ10.tamu.edu/bluelava/edu>

You are now connected to the Bluelava SIP.edu front-end to SER.

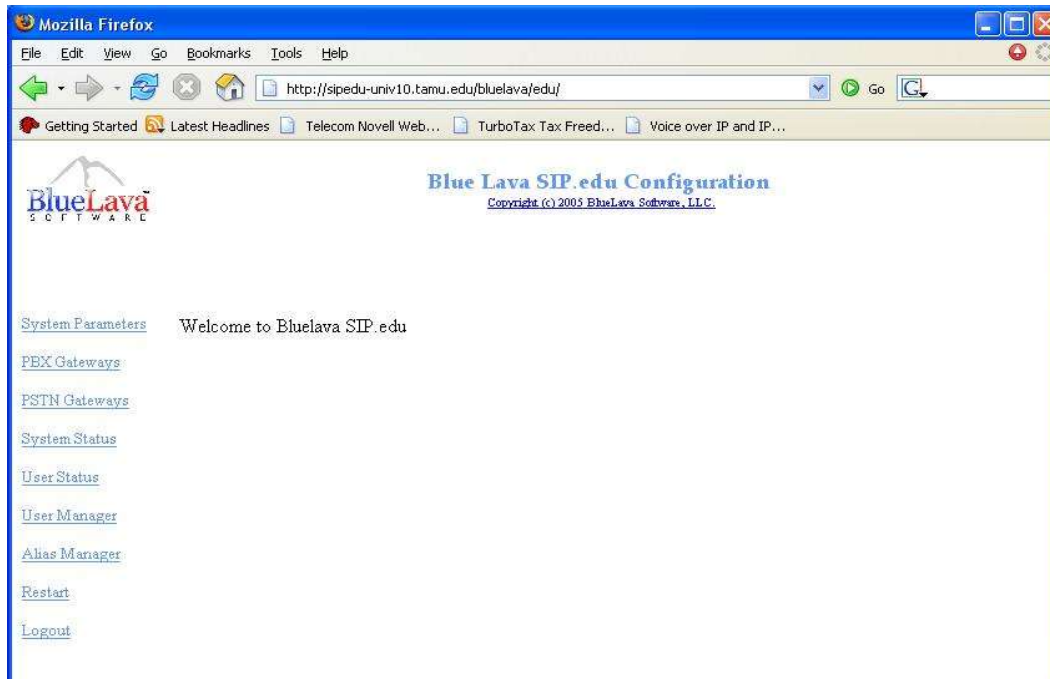
3. BlueLava SER Configuration Guide

Welcome to the BlueLava SIP.edu web front-end to SER. At the login screen enter in the login information for the admin.

User Name: admin

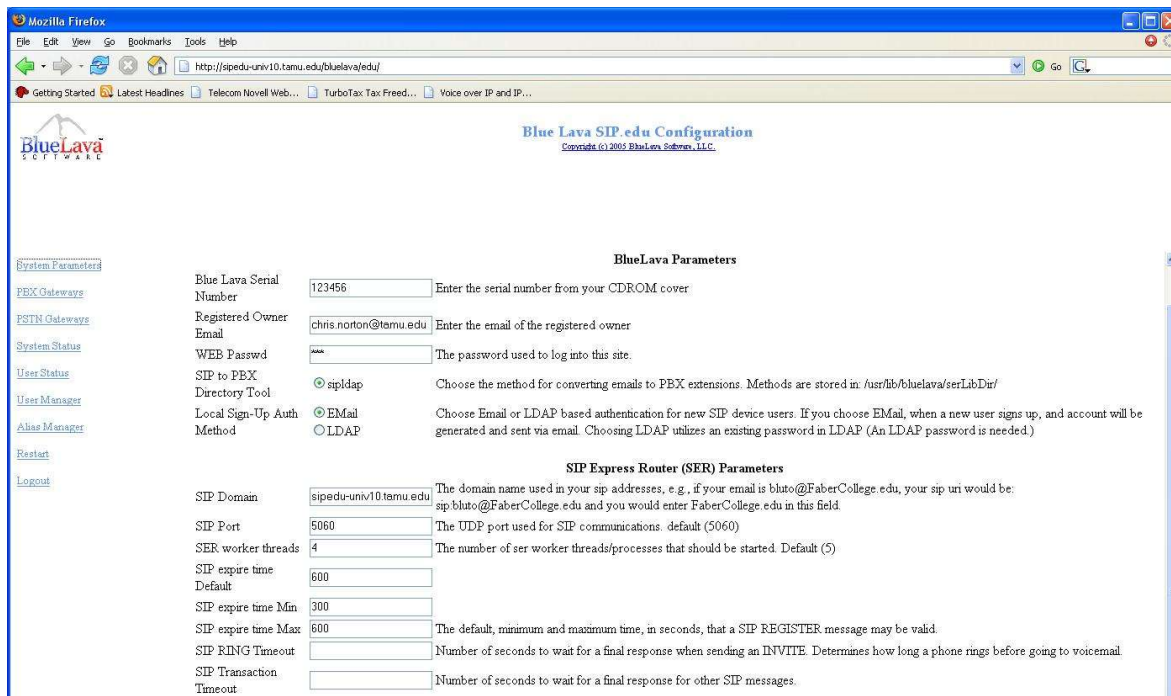
Password: BAR





System Parameters

The first menu item to look at is the System Parameters link. Click on that link and it will bring you to the System Parameters page as seen in the picture below.



The first parameter you see is the “BlueLava Serial Number”. In this field you will enter the serial number given to you with the BlueLava CDROM. For the purposes of this workshop the serial number is:

123456

The next parameter is “Register Owner Email”. This should contain the email of the administrator for this machine. The purpose of entering in the administrator’s email address is for updates distributed from BlueLava. Choose one member from your group to be the administrator and enter in his or her email.

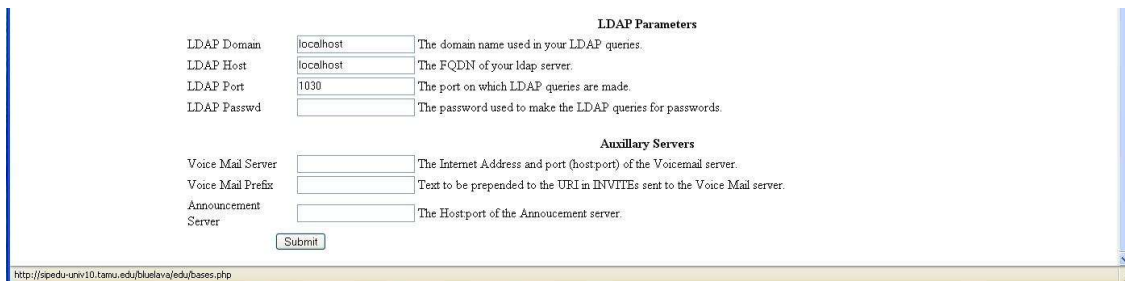
The “WEB Passwd” parameter is the password that the administrator uses to login to the system. This is the same password that you might have had to uncomment using the text editor earlier. You can choose to change this password or you can leave it as is.

The “SIP to PBX Directory Tool” parameter currently only has one choice, but it will be expanded in the future as more options are available to convert the emails to PBX extensions.

The “Local Sign-Up Auth Method” has two different choices Email or LDAP. For a first time or small user deployment the Email auth method is acceptable.

The “SIP Domain” parameter is the most essential parameter on this page. For this workshop the SIP Domain parameter just so happens to be the same as the server’s domain name. In a typical campus deployment the SIP Domain parameter corresponds to the root of the university’s domain (ex. tamu.edu), and the server’s domain name is something different. Make sure to enter in the server’s domain name into this field.

The rest of the parameters in the previous picture should remain at their defaults. We will not be addressing those parameters at this time. In the picture below are the remaining parameters for the “System Parameters” page.



The LDAP parameters for this workshop are:

LDAP Domain: sip.edu

LDAP Host: sipedu-gw.tamu.edu

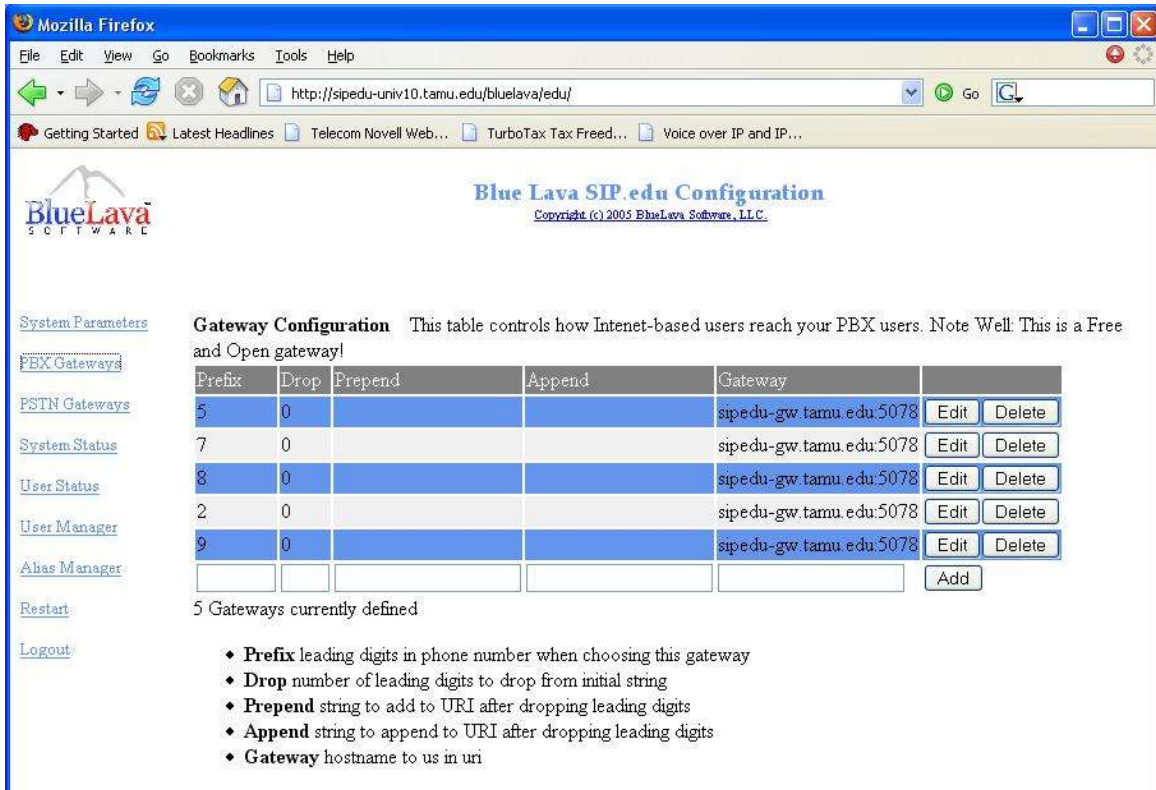
LDAP Port: 389

LDAP Password: ~~BLANK~~ (leave blank)

When deploying this system on a campus consult with your LDAP admin before entering these parameters. The ~~voicemail and~~ announcement parameters will not be covered in this session, but should be considered in a more advanced deployment.

PBX-CAMPUS Gateways

The **Campus PBX** Gateways link in the menu on the left contains all the parameters for creating a dial plan for SIP callers to reach the gateway associated with the PBX, but calls will not be completed until necessary gateway configurations are applied. The “Prefix” field should contain the digit pattern you want to match. The “Drop” field should contain the number of digits to be dropped from the leftmost part of the original dialed number. Prepend and Append add the digits entered into their respective fields to the beginning or end of the digit string. Finally, the gateway field should contain the gateway’s domain name or IP address followed by a colon and the port (5078).



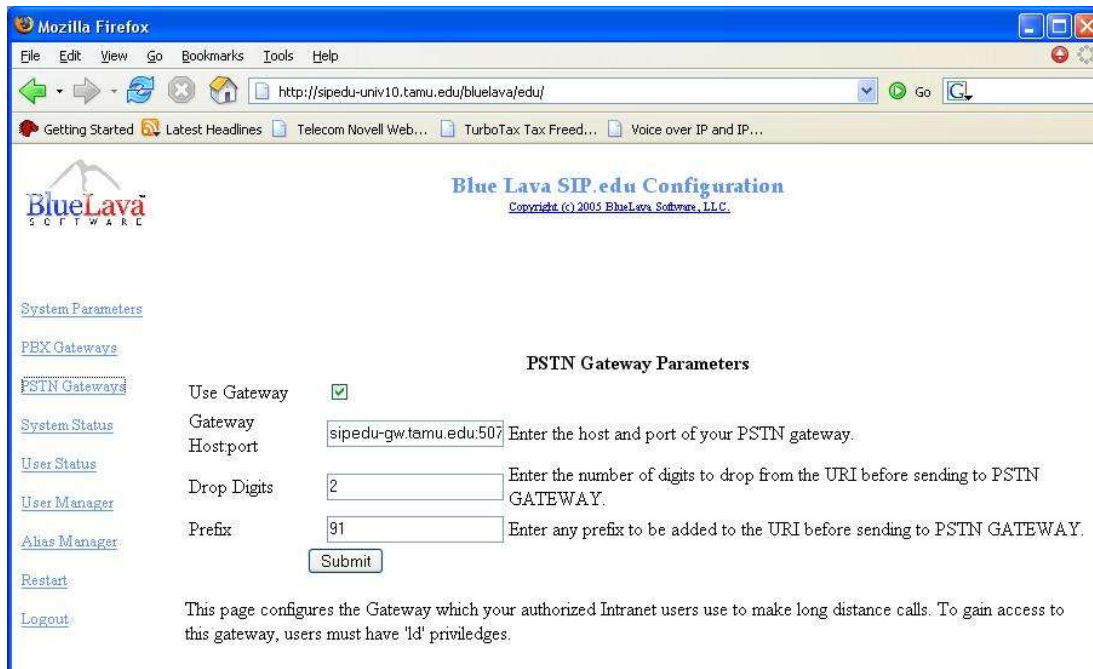
Enter in the following **suggested** dial plan into the chart on the webpage: **(feel free to experiment!)**

Prefix	Drop	Prepend	Append	Gateway
2	0			165.91.160.4:5060_sipedu-gw.tamu.edu:5078
5	0			sipedu-gw.tamu.edu:5078_165.91.160.4:5060
7	0			165.91.160.4:5060sipedu-gw.tamu.edu:5078
8	0			165.91.160.4:5060sipedu-gw.tamu.edu:5078
92	0			sipedu-gw.tamu.edu:5078165.91.160.4:5060
93	0			165.91.160.4:5060sipedu-gw.tamu.edu:5078
94	0			sipedu-gw.tamu.edu:5078165.91.160.4:5060
95	0			165.91.160.4:5060sipedu-gw.tamu.edu:5078
96	0			sipedu-gw.tamu.edu:5078165.91.160.4:5060
97	0			165.91.160.4:5060sipedu-gw.tamu.edu:5078
98	0			sipedu-gw.tamu.edu:5078165.91.160.4:5060
99	0			165.91.160.4:5060sipedu-gw.tamu.edu:5078

This dial plan now gives a SIP user agent the ability to reach the gateway for any five digit extension containing a 2, 5, 7, or 8. The dial plan also allows the user agent to reach the gateway for any 9 plus 7 digit number except for 91, which is considered a pattern that matches long distance calling. Dialing long distance is covered in the next section.

TOLL Gateways

In order to have the option to restrict the ability for a user agent to make long distance calls, the PSTN [Toll Gateway Parameters](#) page was created. When a user of the SER system is created they are given an option to be placed in a grouping that gives them permission to dial long distance. Other users of the system that do not reside in this grouping or that are not members of the proxy will not be able to make long distance calls.



To allow the privileged users of the SER proxy to dial long distance the following information needs to be entered on this page.

Check Use Gateway

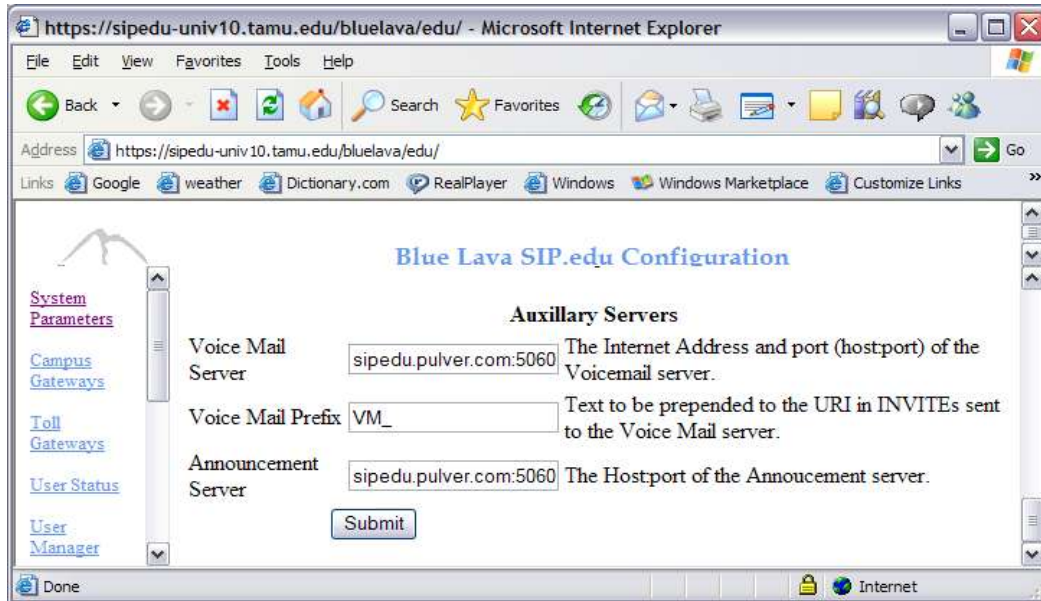
Gateway Host:Port : sipedu-univ10.tamu.edu:5060 (use 10, not your table number)

Drop Digits: 2

Prefix: 9

(note: this prefix is prepended to the URI before the sending to the gateway,)

Voice mail



On the “System Paramters Page”

The voice mail server should be set up as follows:

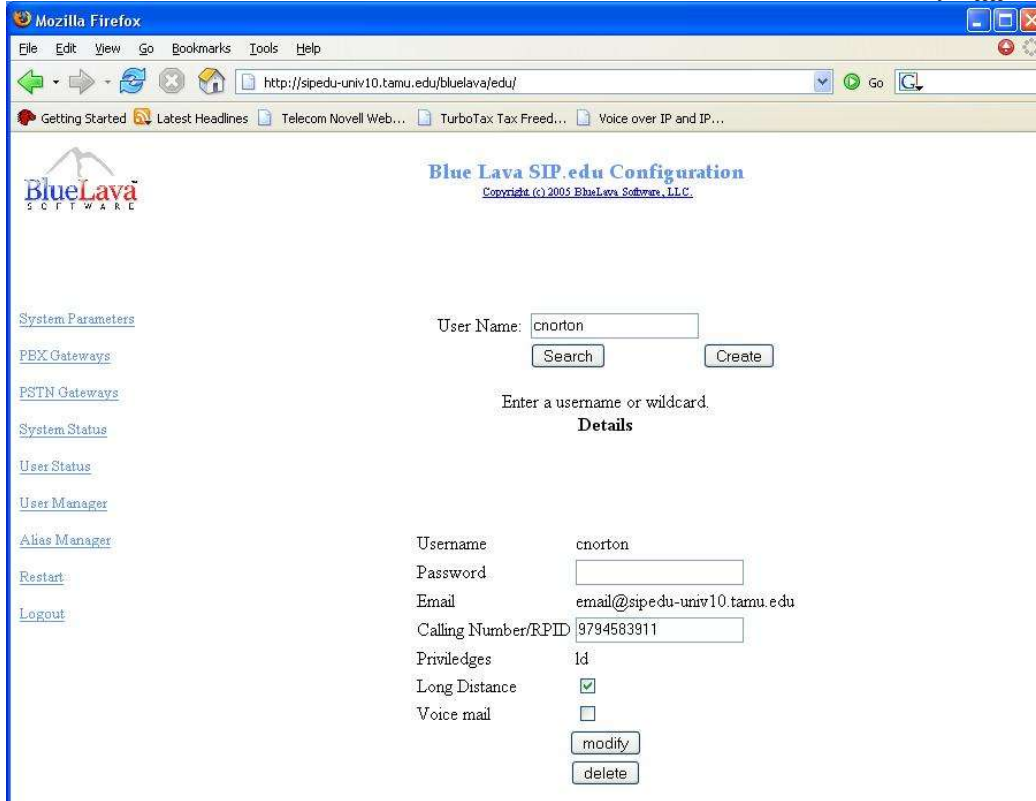
Voice Mail Server: sipedu.pulver.com:5060
 voice Mail Server: VM_ (upper case)

The announcement server may be left blank.

These setting specifies how the voicemail server is used. If a user “Joe.Smith” is suscribed to voicemail, if a call to the user results in no answer, the call is directed to sip:VM_Joe.Smih@sipedu.pulver.com:5060.

User Manager

The user manager page is a method for adding users to the SER system. User’s records can also be looked up and modified as well. To create a user using this method type in the name of the user to be created and click the create button. The information below will appear and that user’s password, remote party id, and long distance privileges will be set. Once done with the configuration of this user click the modify button and the configuration for this user will be saved.



Using the user portion of your email, create a user and subscribe to voicemail and Long Distance.

Alias Manager

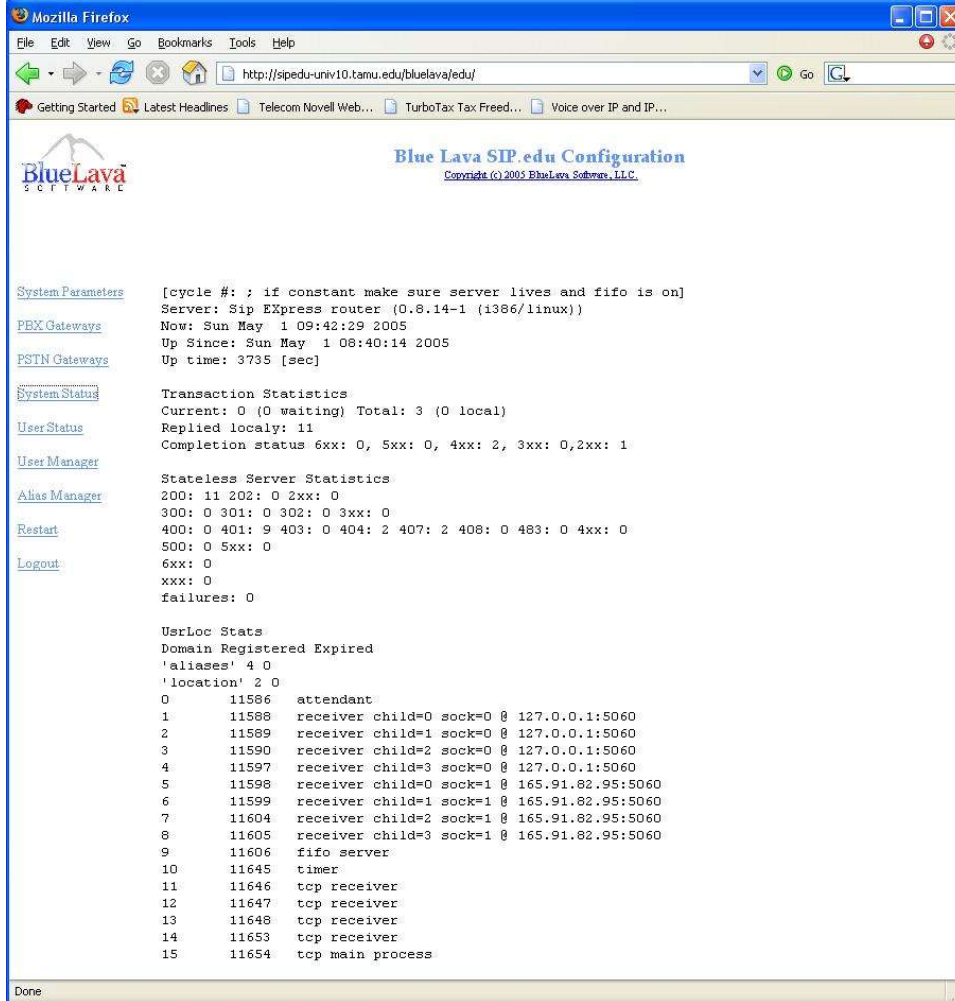
Once a user has been created then that user will need to be assigned an alias. With an alias PBX and PSTN users can reach this new user account. In the alias field the number to be assigned to that user must be entered. In the contact field the entire SIP URI must be entered to not receive an error. Below is an example of an alias created along with a proper URI. Other non numerical aliases can be created, but they will not be able to be used by traditional telephony devices. Note: the wildcard character for searching is '%';



Create an alias for one of the phone numbers that come to your 'university'. (see board) The TAMU gateway will send the last five digits to your table.

System Status

The System Status page below contains all the information that SER collects about other related processes, SIP message transaction, and system up time. There is nothing to configure on this page, but this page will come in handy to monitor overall usage of the server.



BlueLava
SOFTWARE

Blue Lava SIP.edu Configuration
Copyright (c) 2003 BlueLava Software, LLC.

[System Parameters](#) [cycle #: ; if constant make sure server lives and fifo is on]
Server: Sip EExpress router (0.8.14-1 (i386/linux))

[PBX Gateways](#) Now: Sun May 1 09:42:29 2005
Up Since: Sun May 1 08:40:14 2005

[PSTN Gateways](#) Up time: 3735 [sec]

[System Status](#) Transaction Statistics
Current: 0 (0 waiting) Total: 3 (0 local)

[User Status](#) Replied locally: 11
Completion status 6xx: 0, 5xx: 0, 4xx: 2, 3xx: 0, 2xx: 1

[User Manager](#) Stateless Server Statistics

[Alias Manager](#) 200: 11 202: 0 2xx: 0
300: 0 301: 0 302: 0 3xx: 0
400: 0 401: 9 403: 0 404: 2 407: 2 408: 0 483: 0 4xx: 0
500: 0 5xx: 0
6xx: 0
xxx: 0
failures: 0

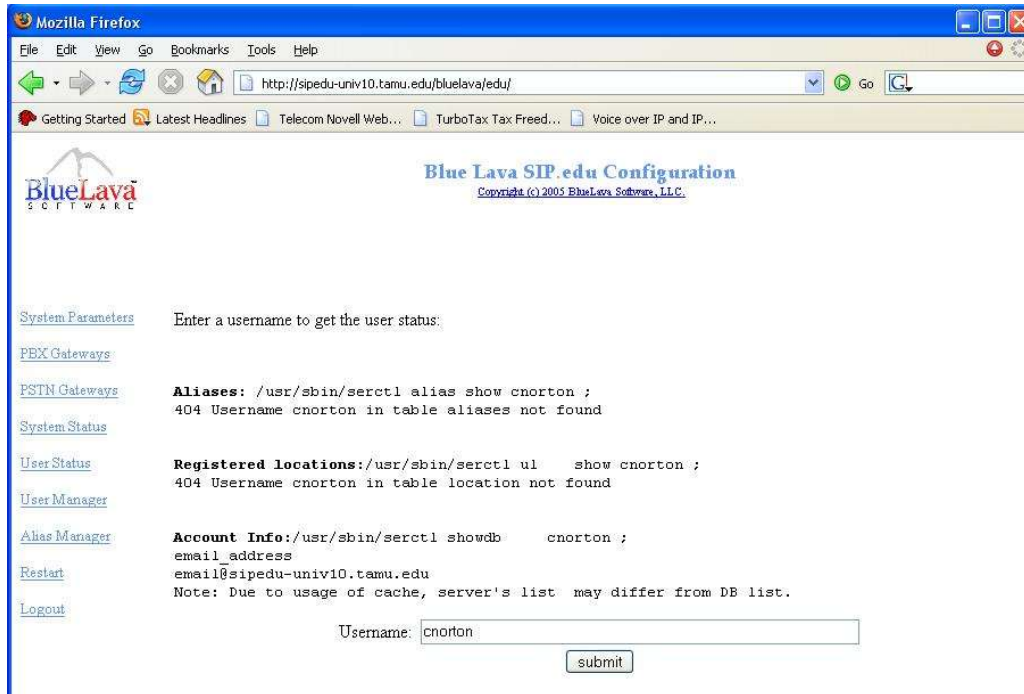
[Restart](#) UserLoc Stats
Domain Registered Expired
'aliases' 4 0
'location' 2 0

[Logout](#) 0 11586 attendant
1 11588 receiver child=0 sock=0 @ 127.0.0.1:5060
2 11589 receiver child=1 sock=0 @ 127.0.0.1:5060
3 11590 receiver child=2 sock=0 @ 127.0.0.1:5060
4 11597 receiver child=3 sock=0 @ 127.0.0.1:5060
5 11598 receiver child=0 sock=1 @ 165.91.82.95:5060
6 11599 receiver child=1 sock=1 @ 165.91.82.95:5060
7 11604 receiver child=2 sock=1 @ 165.91.82.95:5060
8 11605 receiver child=3 sock=1 @ 165.91.82.95:5060
9 11606 fifo server
10 11645 timer
11 11646 tcp receiver
12 11647 tcp receiver
13 11648 tcp receiver
14 11653 tcp receiver
15 11654 tcp main process

Done

User Status

The user status page contains all the information on a particular user in the database. The information for a user in the database includes alias, user location, user contact information, remote party id, and ld privileges. Again there is nothing to configure on this page. Below is an example of a user's status.



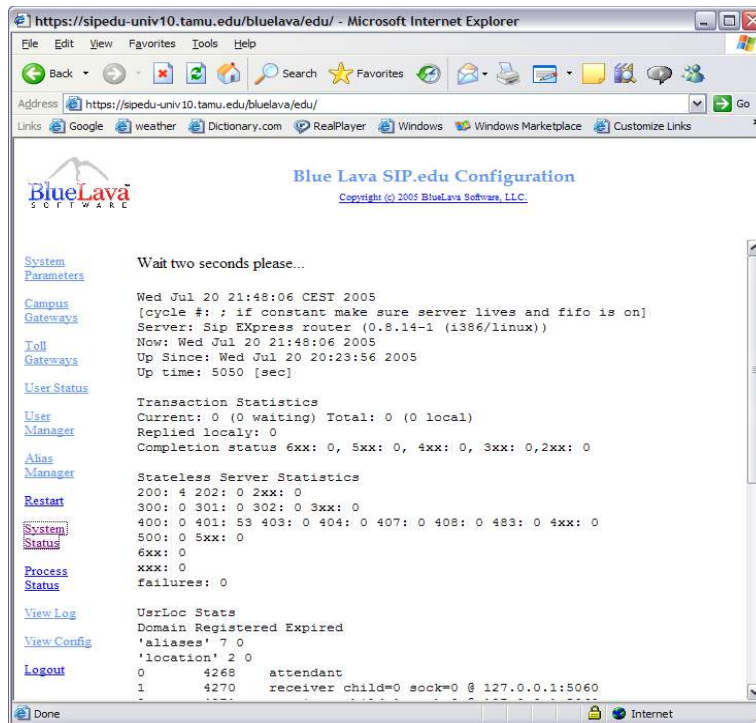
The screenshot shows a Mozilla Firefox browser window with the address bar containing `http://sipedu-univ10.tamu.edu/bluelava/edu/`. The page title is "Blue Lava SIP.edu Configuration" with a copyright notice "(c) 2005 BlueLava Software, LLC".

On the left side, there is a navigation menu with links: [System Parameters](#), [PBX Gateways](#), [PSTN Gateways](#), [System Status](#), [User Status](#), [User Manager](#), [Alias Manager](#), [Restart](#), and [Logout](#).

The main content area displays the following information:

- System Parameters:** Enter a username to get the user status:
- Aliases:** `/usr/sbin/serctl alias show cnorton ;`
404 Username cnorton in table aliases not found
- Registered locations:** `/usr/sbin/serctl ul show cnorton ;`
404 Username cnorton in table location not found
- Account Info:** `/usr/sbin/serctl showdb cnorton ;`
email_address
email@sipedu-univ10.tamu.edu
Note: Due to usage of cache, server's list may differ from DB list.

At the bottom, there is a form with the label "Username:" and a text input field containing "cnorton", followed by a "submit" button.



System Status

Visit the “system status” and “Process Status pages” for a system view.

Congratulations you have now done a basic user setup for a BlueLava SER Proxy. There are far more advanced features underneath the front-end that was seen here. I encourage you to investigate all options and parameters that can be done with this system.