Wireless networking at SLAC

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Computing Division (CD) Networking currently supports wireless networking for laptop computers at SLAC based on the IEEE 802.11 standard running at 2.4GHz and 5.0GHz. A good source for additional information on wireless networking is Wireless Networking by Ben Gross.

802.11b standards provides connectivity at up to a theoretical 11Mbps, depending on distance from the access point, and obstructions such as walls, floors, desks, or even people. One's available bandwidth goes down as you move further from the access point, and as more nodes share the access point' s domain. As with cell phones today, and with proper design and deployment, it is possible to roam from one access point to another without being disconnected from the network.

What this means is that a laptop user at SLAC with a wireless adapter card installed in his laptop (in place of the RJ-45 type network PC card) can make a wireless network connection to the OBSOLETE:SLAC Visitor Network if she/he is in range of a Wireless Access Point (WAP). Wireless networking is only available on the visitor network.

Wireless Networking Policy

Considerations When Using Wireless

Anyone near the wireless access points could "sniff" the network and anyone with a laptop configured for wireless can connect to the visitor network. To protect any information you send across the network (especially passwords) you should use appropriate encryption technology such as SSH, SSL, or one-time password authentication.

Connection to the OBSOLETE:SLAC Visitor Network provides no special access to SLAC resources. The visitor network is treated as any other external ISP connection. If you need access to resources made available only to SLAC systems, you will need to use a SSH or VPN tunnel to access those resources.

Warning: Hosts on the visitor network that are seen as 'scanning hosts', including those that might be running SKYPE as a supernode, BitTorrent, or some other P2P software will be put in the 'penalty box'. A scanning host is a host seen opening many TCP sessions in a very short time. Being in the penalty box reduces that machines network connection outside the visitor network to a shared 56kbps connection with other machines that are in the penalty box, thus drastically reducing their network speed and throughput.

See more information on the visitor network Penalty Box and how to determine if you are in the penalty box.

Deployment Information

In general, areas targeted for deployment will be those that will benefit from wireless networking such as:

- Conference rooms and other meeting areas
- Areas at SLAC where users can or have demonstrated a need for wireless e.g. by the number of users having laptops with wireless adapter cards or laptop users willing to purchase adapter cards and use them at SLAC if wireless was available in the area

All wireless networking at SLAC will be restricted to the OBSOLETE:SLAC Visitor Network only. Wireless networking is not available on any other SLAC network.

If you think that wireless networking is needed in your area please contact net-admin@slac.stanford.edu.

Wireless Pre-Meeting PowerPoint Presentation and Wireless Networking Handout

Laptops using wireless networking are increasingly popular at meetings and conferences and one of the biggest problems we have with wireless at SLAC is a misconfigured laptop. Laptops that are not configured correctly can, and have, shutdown wireless networking in conferences in the auditorium and other locations at SLAC.

For meetings and conferences where there are attendees visiting from outside of SLAC we highly urge Conference Coordinators to run the Pre-Meeting PowerPoint Presentation and distribute the Wireless Networking Handout, both described below. Examples would be for the BaBar Conferences, SLAC Summer Institute, etc that take place in the Auditorium, the Redwood Room, the Orange Room, etc. and any location where there large numbers of non-SLAC attendees. The idea is to try to head off any potential problems by making the users aware of them and what they can do to prevent them.

Pre-Meeting PowerPoint Presentation to bring up the first slide of the presentation. Then click the Slide Show icon at the bottom right of first slide to start the slide show. It is six slides in length and takes about 1 1/2 minutes to cycle through. It will continue to cycle until you stop it.
The Pre-Meeting PowerPoint Presentation shows brief screen shots of help information and wireless configurations for WXP, the Mac, and Linux. Show the presentation prior to the beginning of the first session of your conference each day. There are normally computers setup in the conference areas that can project the presentation on large screens. If you have problems or need help with this contact your Group Desktop Admin who is assisting you with the conference.

The Wireless Networking Handout should be made available to each attendee. It describes some basic configuration settings, how to avoid problem areas, and where to find help if there is a problem. Print out and make as many copies as you think you need for each meeting and distribute them to the attendees before the beginning of the first session they attend.

Wireless Adapter Card Information

CD does not have any wireless adapter cards available for sale or as loaners.

To order a wireless adapter card for your laptop contact Teri Church, teri@slac.stanford.edu, for pricing and ordering information.

If your order is less than $600.00 you can order them using the Email Requisition https://www-bis.slac.stanford.edu/slaconly/bin/rter.asp sending it to teri@slac.stanford.edu with the pertinent information filled out.

Linux adapter and driver information: http://www.hpl.hp.com/personal/Jean_Tourrilhes/Linux/

Wireless Networking on Stanford Campus

With the Stanford University Visitor network, you can use the university's wireless network to access the Internet while on-campus. The visitor network offers limited bandwidth and sessions are limited to 12 hours. Services are limited to email, web browsing, VPN, and SSH. See the instructions at https://itservices.stanford.edu/service/wirelessnet/access.

Stanford campus also provides sponsored wireless networking which is less restrictive in its use. In order to access Stanford's sponsored wireless you must:

- be in possession of a SUID, or,
- be sponsored by a person with a SUID

You may then connect to Stanford's wireless directly by

- self registering with your SUID, or
- entering your sponsors information

See the Stanford Wireless Network for more information and details.