

2007

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# [BISON UTILITIES BACKGROUND INFORMATION]

This document provides a brief overview to Bucknell University and its technological environment. It describes what software was in use, its limitations, and how Bison Utilities was a dramatic improvement upon the current software.

# Bison Utilities Background Information

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## Overview

### About Bucknell and ISR

Bucknell University is a private higher education institution located along the Susquehanna River in Lewisburg, PA. Information Services and Resources (ISR) is an organization within Bucknell University responsible for all technology services and support, serving approximately four thousand students, faculty, and staff. ISR also provides technical services and support to alumni and retired employees.

### Technical Overview

#### Netspace (File Services)

ISR provides every department, faculty/staff member, student, and courtesy user with storage space on an ISR-maintained server called “netspace.” There are two main methods of connecting to the file server on a personal machine – using the computer name (on-campus) and using FTP (off-campus).

#### Network Printers

There are approximately ten network printers located around campus where students may publicly print to from their personal machines. They are set up as printers on a central printer server.

#### Wireless

Bucknell’s wireless network broadcasts two SSIDS, “bucknell” and “bucknell\_guests.” “Bucknell” is protected with a static WEP key and is intended for current students, faculty, and staff. It provides access to on-campus services such as file services and printing services. “Bucknell\_guests” is unsecured and is intended for alumni, conference attendees, and local residents. It provides Internet access to everything *except* file services and printing services.

#### Software

ISR requires all students have some form of anti-virus and anti-spyware protection to use their network. While this was not specifically checked for, it was listed in the Appropriate Usage Policy signed by students before they are allowed access to the network. Bucknell had site-licensed anti-virus and anti-spyware software located on a file server for current students, faculty, and staff to install on their personal machines.

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## Current State

Three programs existed that provided easy access to the services listed above: an HTML executable program that mounted various shares on the file server, an HTML executable that displayed a list of available network printers and allowed the user to connect or disconnect from them, and a script that created a wireless profile for “bucknell” with the correct WEP key.

The utilities only worked in Windows XP and on-campus. The file services utility did not allow for FTP access to file services when off-campus, and required all file services shares be mounted/unmounted simultaneously. The utility also did not provide any information about anti-malware software located on the file server.

## Desired State

### Compatibility

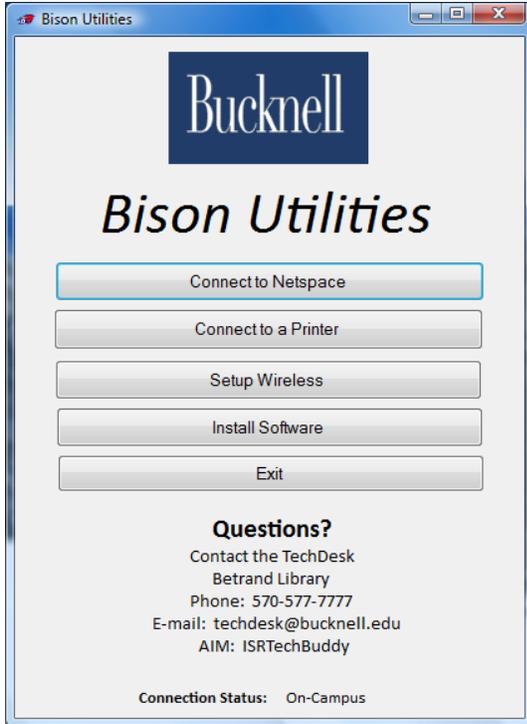
The largest desire with a new utility was to ensure that it successfully performs the tasks of the current three utilities in both Windows XP and Windows Vista.

### Detecting Current Location

Bison Utilities will look at the IP addresses of all network adapters on the system and determine one of four possible locations, each allowing different levels of access:

Location	Definition	User Abilities
<b>On-Campus</b>	Wired, Wireless on “Bucknell” SSID, or VPN connection	<ul style="list-style-type: none"><li>• Can mount/unmount selected network shares, connecting via computer name.</li><li>• Can connect to and print to network printers.</li><li>• Can set up the “bucknell” wireless profile with the appropriate WEP key.</li><li>• Can install software from the file server.</li></ul>
<b>Guest Wireless</b>	Wireless on “bucknell_guests” SSID	<ul style="list-style-type: none"><li>• Can set up the “bucknell” wireless profile with the appropriate WEP key (students and employees may restore the wireless profile in this mode in case it is lost).</li></ul>
<b>Off-Campus</b>	All other connections	<ul style="list-style-type: none"><li>• “Connect to NetSpace” button is still active but “under the hood” is connecting via FTP instead of via computer name.</li></ul>
<b>Not Connected</b>	No connection outside of the local machine	<ul style="list-style-type: none"><li>• Can set up the “bucknell” wireless profile with the appropriate WEP key.</li></ul>

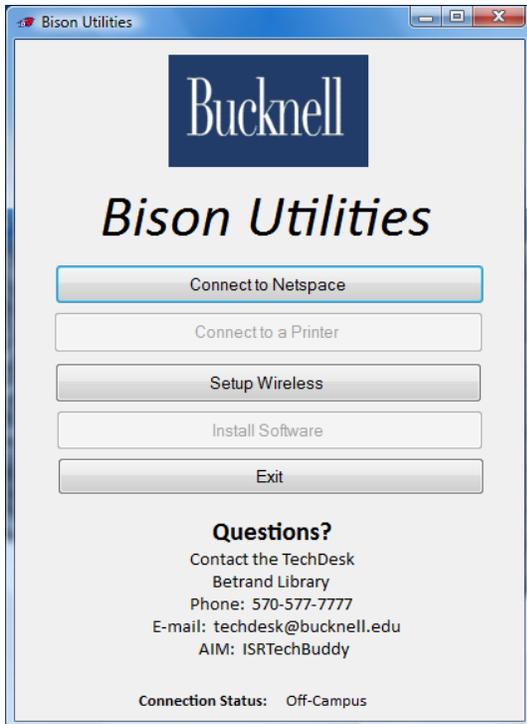
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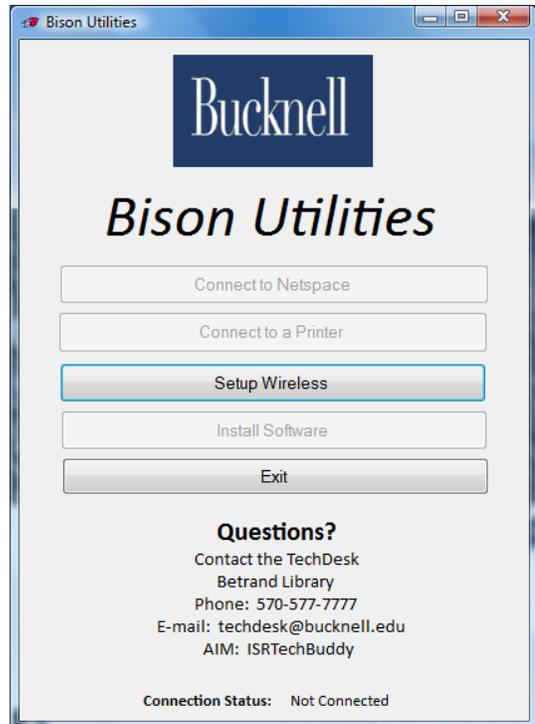
Main program view when on-campus



Main program view when on guest wireless



Main program view when off-campus



Main program view when not connected

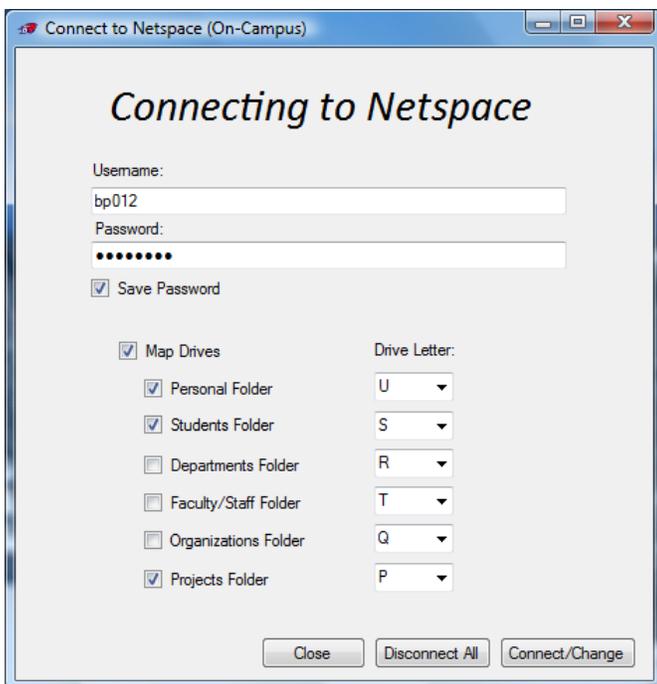
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## File Services

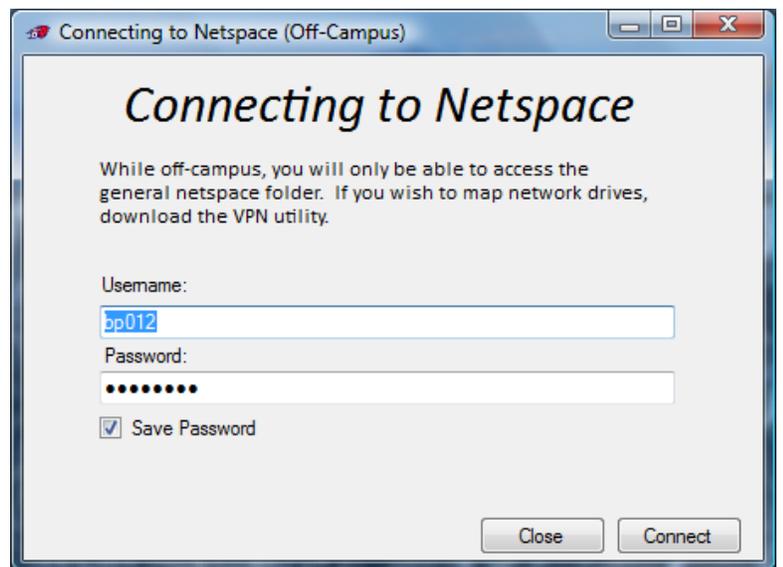
File storage may only be accessed at on-campus and off-campus locations and is accessed differently depending on the location.

On-campus, Bison Utilities will connect using computer name and show the user's folder by default unless one or more shares are selected to mount. If shares are select to mount, the user may select from drive letters which are currently available and mount/unmount any individual share at will. Bison Utilities will remember the username of the user as well as the password, if desired.

Off-campus, Bison Utilities will show the main "netspace" share, connecting via FTP. The user is not specifically aware that the method for connecting is different.



**"Connecting to Netspace" program view when on-campus**

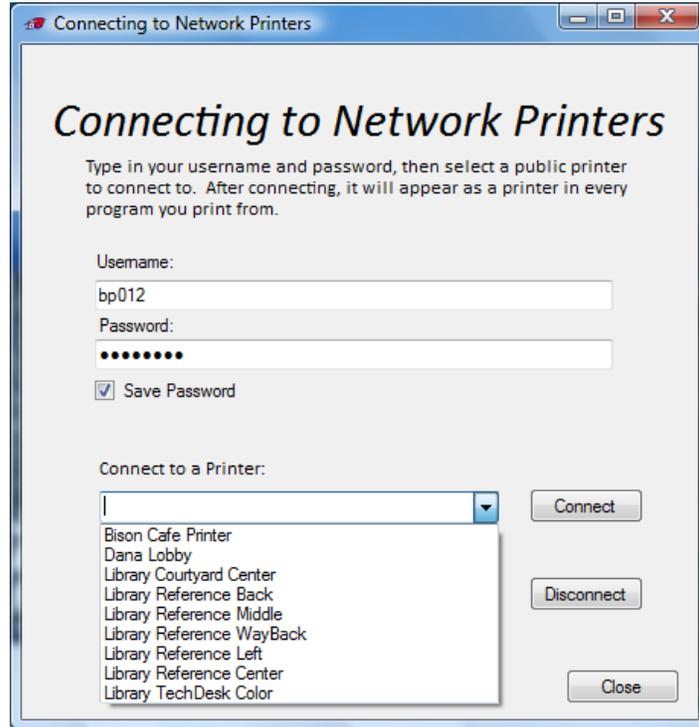


**"Connecting to Netspace" program view when off-campus**

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## Network Printers

Network printers are only accessible on-campus and are located on a printer server. Users will enter their username and password and select a printer to connect to from a drop-down list. A second drop-down list is populated with printers that are currently connected that may be disconnected, if desired. Only Bucknell printers are populated in this list. Any other network printers are ignored. The username is saved as well as the password, if desired.



"Connecting to Network Printers" program view

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## Wireless

The “bucknell” wireless profile may be added anywhere. This allows the user to connect to the wireless network for the first time regardless of current network connection (if any) or restore the wireless profile in case it is lost. The program will display a message when the user is on guest wireless asking them to click the “Setup Wireless” button after the program launches.



Message displayed upon program launch in “Guest Wireless” mode

## Software

Software is only accessible from on-campus. Users will be shown a short description of the software titles available to them. To access the installation files, users enter their username and password and hit “Connect”. The username is saved as well as the password, if desired.



“Installing Software” program view

## Results

All desired goals were met in the creation of Bison Utilities. As a result, not only were the features of three programs consolidated into one but the same program worked on both Windows XP and Windows Vista. Students found this utility to be much more flexible and user-friendly. It also dramatically reduced the number of calls to the Technical Help Desk relating to Bison Utilities’ targeted issues during freshman move-in day and the week returning students moved in.