Pre-Lab Activities:
None

Purpose of the experiment:
In this lab, you will begin to learn to operate a Nortel Norstar key system. You’ll get some experience using the system, you’ll partially configure a telephone set and you’ll make changes to the system configuration. Finally, you will set up SMDR capture and examine the SMDR records.

Smoking and any food or drinks are not permitted in the Applications Lab!

Equipment:
- Four Norstar phones, extension numbers (two digits) are marked on the phones.
- Two “outside” phones, these are part of the lab PBX, which uses 4-digit numbers.
- There are two lines connecting the PBX and the Norstar; you reach the Norstar by calling 2511 or 2512.
- Windows PC with Hyperterminal used to record SMDR
- A schematic diagram of the telephone portion of the lab is posted.
- You’ll use various Norstar manuals - look in the green binder and on the phones.

Taking Data
At the end of these instructions, you will find a sheet with several labeled sections. Use this sheet to record data as you take measurements. The lab instructor must initial the data sheet before you leave the lab. You must include the initialed data sheet with your lab report to receive full credit.

Steps to be Performed:
General Background and Phone Usage
- Examine each Norstar phone and determine the type/model of the phone. Locate the operating instructions for each phone.
- Make an internal call between two Norstar phones. Call one of the outside phones from a Norstar phone.
- Place calls from an outside phone to 2511 and 2512. Note which phones ring and what visual indications on each phone show the incoming call. Answer the calls from different phones.
- Place an incoming call, answer it, and transfer that call to another station.
- Have Dilbert answer an inbound call and place the call on hold. Then have Dilbert call Wally and return to the original call.
- Have Dilbert answer an inbound call again, but this time have him add Wally to the call, i.e. create a conference call.
- Have Dilbert call Alice, then conference in Wally. What happens if Wally hangs up?
- Have Dilbert call Alice, then conference in Wally. What happens if Dilbert hangs up first?

Exercise Voice Mail
When you leave messages, be sure to include your group number in the message itself.
- From Dilbert’s phone, call Wally, but do not answer the call. Note who gets the voice mail message.
- Now call Alice from Dilbert’s phone and note who receives your message.
- Alice has not initialized her voice mail box (if you were watching the display of Dilbert’s phone carefully, you would see a message to that effect). Use Alice’s phone to initialize her mail box. Just press VM and follow StarTalk’s directions. The password for a newly created box is 0000.
Make the new one 1111. Test – by leaving another message – that unanswered calls to her phone now go to her mailbox.

Phone Configuration by Individual Users

Users of sophisticated phone systems can make quite a few customizations to the operation of their own phones. Note that it’s common usage to say we’re configuring Dilbert’s phone, but the configuration is actually stored in the Norstar itself.

- Use the [Feature] * 0 function to map out the buttons on Dilbert’s phone. Check out [Feature] * 7. Leave both Wally and Dilbert’s phones at the highest contrast.
- Program the topmost, left button of Dilbert’s phone – the one closest to the Ameritech logo – to autodial the 2513 external number. Test that Dilbert can call 2513 with a single key press

Telecom Manager Activities – Changing System and Phone Configurations

Your instructor will give you an overview of the configuration process. For obvious reasons, access to the system configuration is password protected. [Note: ignore the button labeled STCONFIG.] To enter a configuration session, you press

[Feature] ** CONFIG

The password is CONFIG.

- Using the Receptionist’s phone, enter a configuration session and change the date and time. Make it early morning on the weekend. Note when the other phones’ displays are updated as you change the date/time and exit the configuration session.
- Try entering a configuration session from Wally’s phone and then Dilbert’s phone. What happens?
- We now want to change Dilbert’s phone: We want Line 1 to ring and Line 2 to disappear altogether from his phone. You can readily see why this is a managerial activity, not something Dilbert can do for himself. You will need to enter configuration mode, go to section A.2. Line Access, and make the changes. Test that the changes work as planned.

Station Message Detail Recording (SMDR)

There’s a "Norstar SMDR" icon on the desktop of the computer. Double click it. The terminal window will serve as your SMDR collection device. (You lab instructor may have set this up already)

- From here on, keep a precise record of every call you make and any manipulation of the call (hold, transfer, conference, etc) you make. In your lab report you will link each call with the call records it produces. You’ll want to cut & paste the data you collect and email it to yourselves.
- What calls you make is up to you, but the sequence of calls must include (note that only calls to and from outside lines are recorded in SMDR):
  - Inbound and outbound calls
  - Calls that use both outside lines at the same time
  - Placing a call on hold, making a second call, and then returning to the first call.
  - A conference call
  - A call that is unanswered and goes to voice mail.
  - An outbound call where you dial several digits after the call has been answered (simulating a call where you get an IVR, "Press 1 to.....").
Requirements for your lab report

General Rules

Your report must be typed, except that drawings may be made by hand. While your raw data sheet must be attached, all relevant data must be copied into your typed report. Do not put things like “see data sheet” into your typed report.

Things to put into your lab report

A header section with your name, your teammates’ names, group number, and date/time of the lab.

The initialed raw data sheet (always attach this at the end of the report)

Each of the subsections below requires a brief description of what you measured, your results, and – when requested – a reference to and a quote from a reference source that you can compare your measurement to (for example, one of our readings or an internet source).

- List, show, or explain as appropriate:
  - Station set models
  - Results of inbound calls
  - Steps needed to create call transfers and conference calls
  - Result of conference call tests
  - Button assignments on Dilbert’s phone (what function did each button perform).
  - Steps needed to reprogram Dilbert’s phone
    - Setting up the speed dial
    - Changing the line appearance
  - Steps needed to initialize Alice’s mailbox
- Include a printout of the SMDR records you recorded and saved, unchanged.
- Determine from the call records (Cut & paste or otherwise reproduce the records for these calls in your write up):
  - For a call you placed on hold, how long was the call on hold?
  - For a call that went to voice mail, what physical extension received the call?
  - For a call where you dialed extra digits, can you locate the extra digits in the SMDR?
Procedures for transferred calls and conference calls

Steps needed to initialize the mail box for Alice

Button Assignments on Dilberts phone (what are the current feature assignments on the phone)
Setting up the speed-dial on Dilbert's phone

Steps needed to reprogram the line appearance on Dilbert's phone

Record of sample calls that produced SMDR