HART
intercivic ™

Setup Procedures for systems including BOSS/TALLY and BALLOT NOW

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Change History

Version	Date	Author	Description
0.1	6/28/01	Victor Babbitt and Steve Gonzalez	Created preliminary document
0.2	7/5/01	Victor Babbitt	Alterations to BOSS/Tally setup, registry settings to support Ballot Now, Added Rededt32 to Utilities disk, more small changes.

SECTION 1.   INTRODUCTION

QUICK REVIEW

The procedures outlined in this document are designed to help a technician install a complete BOSS/Tally or Ballot Now system starting with a new computer and the required software and hardware.   Once the procedure has been implemented, the user will have a computer properly configured and tested for the Hart applications to run on it.

The Administrator account on the computer will be owned by Hart, and not available to the customer. An account will be set up for an Election Administrator that will allow general use of the computer and all installed software, but the Election Administrator will not be allowed to alter the auditing, create or manage users other than Restricted Users, alter the BOSS, Tally or Ballot Now executables, alter certain operating system files, or load or install drivers. No user will be able to boot to floppy and avoid password control. No user will be able to alter any BIOS settings.

Each system will also have implemented a Restricted User for each function (BOSS, Tally or Ballot Now) installed on the system. This restricted user will be able to run the Hart programs, but will have no other access to the operating system, to the file structure, to the registry, to the Task Manager, to Password Change, or to other installed programs. A Restricted User will be able to alter data on the system only via the Hart applications.

OVERVIEW

There is presently a large number of steps required to complete an installation. The installer will begin generally with the required hardware and at least 3 disks, the OS installation disk, which contains the particular operating system to be installed on this system; the Hart Utilities disk, which contains the many drivers, utility programs and associated data that is required for installation, and the Application Installation CDs, which contain the BOSS, Tally or Ballot Now programs.

While the steps below are listed sequentially, we can break down them functionally as follows:

A)   Do a clean install of the NT 4.0 Operating System. Hart will use just one reference Operating System disk in all Hart BOSS/Tally/Ballot Now installations.

B)   Install and configure drivers for audio, video, SCSI, PCMCIA Card Readers, printers and CD-R drives.

C)   Install the Applications, whether BOSS, Tally or Ballot Now.

D)   Set up global system auditing

E)   Create Election Administrator Users

F)   Create Restricted Users

G)   Make Security alterations to global computer environment.

SECTION 2.   HARDWARE REQUIRED

The following Hardware is required in typical installations

1.   PCMCIA (MBB) card reader/writer

2.   Parallel Card (for second printer for Tally)

3.   Audio Card

4.   SCSI card (for interface to scanner for Ballot Now)

5.   CD Writer

SECTION 3.   SOFTWARE REQUIRED

The software required for installation of BOSS, Tally, and/or Ballot Now is as follows:

HART NT 4.0 OS INSTALLATION DISK

This disk contains the standard Operating system.   All Hart installations will be clean installs of this particular OS. The particular OS used is NT 4.0 Workstation, build 1381. Note that the Product number required for installation is on the CD label.

HART INSTALLATION UTILITIES DISK

This disk contains various drivers, the NT service pack, profile .dat files and other files needed to complete typical installations. The CD will include:

BOSS_Tally_BN_SETUP.doc – A MS Word document on the setup procedures for a BOSS, Tally or Ballot Now system.

BOSS_Tally_BN_SETUP.txt – A text document on the setup procedures for a BOSS, Tally or Ballot Now system.

\ASPI – Folder for ASPI32.exe, a driver required for proper installation of Ballot Now.

\DAT – Folder that contains the NTUSER.dat files, which holds environment information for restricted users. There are two versions of this, one for BOSS and Tally users and another for Ballot Now users.

\Drivers – Folder for audio and video drivers typically needed for installations, and the NIC drivers needed for a Ballot Now installation.

\Elan – Folder with the Elan PCMCIA (MBB) card reader/writer drivers.

\IE5 – Folder containing the installation program for Internet Explorer 5, which is used to support the Adaptec CD writer software.

\MCE Card Explorer – Executable required as part of the MBB reader software.

\Parallel – Folder with the parallel card driver

\Regedt32 – Folder that contains Regedt32.exe, a registry tool

\Printers – Folder with common printer drivers

\Reg Entries – Folder with registry files for setting up the Election Administrator and to disable Windows Key functionality.

\SCSI – Folder containing the SCSI drivers, required for Ballot Now installations.

\SP6 – Folder with Microsoft NT4.0 Service Pack 6a with 128-bit encryption

HART APPLICATION INSTALLATION DISK (BOSS/ TALLY)

This disk contains the executable installation package for BOSS and Tally programs.

HART APPLICATION INSTALLATION DISK (BALLOT NOW)

This disk contains the executable installation package for the Ballot Now program.

DRIVER CDS FOR PARTICULAR PRINTERS

While printer drivers may be included in the Hart Installation Utilities Disk under \Printers, the installer may be required to install printer drivers from manufacturer CDs of downloadable drivers from manufacturers web sites.

ADAPTEC CD CREATOR

This program is required for any installation where election data needs to be archived or transferred by writing a CD-R.

SECTION 4.   INSTALLATION PROCEDURES

STEP 1

With the power cord unplugged, install all needed extra hardware like SCSI cards, parallel port cards, Elan card readers or whatever is needed in the system. Ballot Now gets a SCSI; Tally gets a second Parallel Port Card. Ballot Now, BOSS, and Tally all get an Elan card reader.

STEP 2

Insert Hart NT 4.0 OS Installation Disk into system and boot to system BIOS and alter the boot sequence such that the CD boots first and the Hart Drive boots second. If the system will only host BOSS and/or Tally, then disable the Network Controller (NIC) if that option is available under BIOS.

STEP 3

Exit and save changes from BIOS and continue to boot to CD.

STEP 4

The NT install will begin. Follow prompts until you get to the portion of configuring the partitions.

STEP 5

Delete all the partitions and create one 4GB partition (4048MB), which is the maximum size allowed by NT.

STEP 6

Select the Partition created and install NT to that partition and then you will be prompted to format the partition. Format the partition using NTFS only.

STEP 7

After the format has completed then continue with the install following the prompt and select the defaults. Then you will be required to reboot. REMOVE THE CD BEFORE REBOOTING.

STEP 8

The system will complete booting and request the CD. Insert the CD and wait 5 seconds and then click on OK.

STEP 9

The install will begin again and you will then be prompted to select what kind of installation to perform. Select the radio button to do a Custom install.

STEP 10

Next prompt is to enter the your name and organization. Here enter the entity's name for both options (Example: "Harris County") The maximum is 15 characters.

STEP 11

Then enter the Product Key, which is located on the side of the computer as a Microsoft Windows 4.0 label. Should this Product Key not be available, use the Product Key found on the label of the Hart NT 4.0 OS Installation Disk.

STEP 12

Enter the Computer Name. This is going to be a combination of the entity's name along with the application such as BOSS.

STEP 13

Enter the Administrator password. Steve Gonzales (512) 252-6652 will control the database of all Administrator passwords. Contact him for the Administrator password for this system, or for access to the database holding such passwords.

STEP 14

Continue on with the installation and do not create an emergency recover disk at this time.

STEP 15

Select the components you will install. Uncheck the Accessibilities Options, double click on the Accessories and uncheck everything except the Calculator and WordPad. Under Communications uncheck everything except HyperTerminal, unless this system does not use or have a modem, in which case uncheck HyperTerminal as well. Under Multimedia uncheck everything but Media Player, Sound Recorder, and Volume Control.

STEP 16

Then you will be prompted to setup the system to connect to a network. Select the option to NOT to connect the system to a network at this time.

STEP 17

Configure the clock, set the proper time and date, and accept the video settings. DO NOT try to configure the video at this time.

STEP 18

The install will continue and the request that you reboot. Eject the CD and reboot.

STEP 19

Boot into the system BIOS and change the boot sequence to the following: 1) Hard Drive, 2) CD-ROM Drive. Note that the Floppy drive IS NOT in the boot sequence at all. Password protect the BIOS with the Administrator Password. In addition, change the parallel port protocol to EPP mode. The EPP mode is required for the PVSReset program to operate correctly.

STEP 20

Install Service Pack 6a with 128-bit encryption from the Hart Installation Utilities CD under \SP6. Reboot.

STEP 21

Remove the IE, Inbox and Briefcase Icons from the desktop. Empty the recycle bin.

STEP 22

Configure the extra hard drive space through Disk Administrator as one large partition. Format the partition NTFS. Once the format is done, configure the drive letters so that C: and D: are the hard drive and the CD-ROM is drive E:

STEP 23

Under system properties Startup/Shutdown set the show list time for 5 sec and do the same under Hardware Profiles for wait for user selection. Set it for 5 sec as well.

STEP 24

Load the video drivers from the Hart Installation Utilities CD. You will find video drivers in the \Drivers\(system model number)\Video\ folder. Find Setup.exe within this folder and run it from the CD. Reboot.

STEP 25

Configure the video settings for 1024x768 and 16bit color.

STEP 26

Load the audio drivers from the Hart Installation Utilities CD. You will find audio drivers in the \Drivers\(system model number)\Audio\ folder. Find Setup.exe within this folder and run it from the CD. Reboot.

STEP 27

Load drivers for the SCSI card next (If this machine is for Ballot Now). If this machine will use Tally, then the second parallel port card and will need the drivers for it installed at this point. Both types of drivers are found on Hart Installation Utilities CD, under the \SCSI and \Parallel folders specifically. Reboot once completed.

STEP 28

Load the drivers for the Elan card reader, found on Hart Installation Utilities CD under \Elan. Reboot when finished.

STEP 29

Run the installation program for MCE Card Explorer, which is found on the Hart Installation Utilities CD under \MCE Card Explorer. Running this program registers us with card services, after installation our next step will be to remove this. Reboot when finished.

STEP 30

During boot install a PCMCIA card into the reader.

STEP 31

Go to Control Panel, then Devices and set the PcCGoCls device to boot. Then remove the PCMCIA card. If the PcCGoCls device is not found, run MCE explorer with the card in the slot, then check devices again.

STEP 32

We now need to remove the MCE. Do not run the uninstall program. Delete the \MCE Card Explorer folder. Delete the \Winnt\Profiles\All Users\Start Menu\Programs\MCE Card Explorer folder.

STEP 33

If system is running Ballot Now, run the installation program ASPIINST.exe. You will find this in the Hart Installation Utilities CD under \ASPI. Reboot when finished.

STEP 34

Install the needed printer drivers with the printers connected to the correct ports. Reboot after installing each device. Test each printer after installation. The printer drivers will be found on CD's supplied by the printer or on the manufacturers web site. Install the drivers only, do not install any extraneous software not required by the printer for operation. Note that for Tally installations, the Laser Printer needs to be installed on LPT2 and set as default.

STEP 35

Install Internet Explorer 5. Find the installation program for IE5 in the Hart Installation Utilities Disk, under the \IE5 folder. Perform a "custom" install of IE5, unchecking every program module except the Web Browser. Reboot.

STEP 36

Install the Adaptec CD Creator Software. This should come on a separate Adaptec disk, or a Dell disk containing the Adaptec Software. This is required for any system where archiving or transfer of election data is being done by writing a CD-R. Should the installation process offer to install IE5, do not install IE5 as we have previously installed the only required components. Reboot after installation and test.

STEP 37

If the installation includes Ballot Now, we need to add permissions to a certain registry key for proper functioning of Ballot Now. Login as Administrator. Copy Regedt32.exe from the Hart Installation Utilities Disk in the \Regedt32 folder to the local \Winnt\System32 folder. Run Regedt32 from the Start->Run bar, Open Local and find and select the key: HKEY_LOCAL_MACHINE\software\WES\BallotNow\Options. Under Security->Permissions, set EVERYONE to FULL CONTROL. Close Regedt32, and delete Regedt32 from the \Winnt\System32 folder. Empty the Recycle bin.

STEP 38

If BOSS and Tally are required, install the BOSS & Tally software from the Hart Application Installation Disk (BOSS/Tally). If Ballot Now is to be installed, install Ballot Now from the Hart Installation Application Disk (Ballot Now). Note that Ballot Now should be installed on another drive, which is be required as the boot drive is limited to 4GB. Reboot after installing software.

STEP 39

If the system is running Ballot Now, run AddScan.exe from the \Hart InterCivic\Ballot Now\ folder. Browse to C:\Winnt\Pixtran\Scanner Drivers and search for the specific driver for the scanner that is attached, and load that driver.

STEP 40

If the system is running Ballot Now, copy the \Drivers\(your system model)\NIC folder from your Hart Installation Utilities CD onto the C drive. Now right-click on the network neighborhood. You will be prompted to install network. When asked for an adapter, point the browser to the .inf file within the C:\NIC folder. When queried for a DHCP server, say NO. When this process finishes it will bring up network properties. Enter the IP address of the computer as 192.162.0.1. Share the Ballot Now directory, and map the shared Ballot Now directory to the "Z:" drive. Use //192.162.0.1/Ballot Now as the directory name. Test Ballot Now at this time. When testing, be sure that the correct scanner under the preferences tab is selected.

STEP 41

In the Control Panel, go to Devices and set the boot sequence of Tvichw32 to automatic.

STEP 42

Note when testing BOSS, Tally or Ballot Now, the default logins and passwords for these programs are as follows: BOSS and Tally login is "BOSSADMIN", password is "ADMINBOSS". For Ballot Now, the default login is "BNADMIN", and the default password is "ADMINBN". If the Adaptec CD player is running as an icon on the system tray, disable the icon. Once Ballot Now has been properly tested, delete the C:\NIC folder.

STEP 43

Presently, each application, BOSS, Tally or Ballot Now come with various default users. We wish to delete these default users. For each application, perform the following: Open the application using the default login above. Go to Administration->User Maintenance, and delete all the default users (note that the login you used to enter is not shown on this list). Now create a new user with the Login "ElecAdmin", and the password. For the password, Steve Gonzales (512) 252-6652 will control the database of all Standard ElecAdmin user passwords. Contact him for the password for this system, or for access to the database holding such passwords. Close the application.

STEP 44

Now open each application using the ElecAdmin login and delete the default user for the application (either BOSSADMIN or BNADMIN). Close the application

STEP 45

Install any extra software required for this installation, such as Adobe or Office at this point.

STEP 46

Under User Manager, go to Policies>Audit Policy. Set the audit policy for the machine to log the success and failure of a) Logon and Logoff and b) File and Object Access.

STEP 47

For each of the following folders, right click on the folder, go to Properties > Security > Auditing. Check box for "replace auditing on subdirectories". Add all user groups to auditing, except the System group. Check to audit success of "read", "write", and "delete". The folders to set auditing on are: /BOSS, /Tally, /Ballot Now.

STEP 48

Under Event Viewer, go to Log > Log Settings for security logs only. Set the maximum logfile to 500 MB (500032KB). Check box to "overwrite events as needed". This Logfile should give the machine a running log of the last approximately 150 hours of use. Clear the log at this time, do not save it to disk, and reboot.

STEP 49

For each drive, right click, go to Properties > Security > Permissions. Check "Replace permissions to all subdirectories". Set permissions for Administrator to "FULL", for Power Users and Users to "Change" (RWXD). Remove any other groups that are listed (such as the group Everyone). After setting the permissions on the drives, on the following folders to "Read" (RX) for the Power Users and Users Groups (note that we are setting only the files to READ access, do not check the "Replace permissions to all subdirectories" box.).

\BOSS

\Tally

\Winnt\System32

\Program Files\Common Files

\Program Files\Hart InterCivic

For the \Ballot Now folder, change the permissions on the .dll and .exe files only to "Read" (RX) for the Power Users and Users Groups.

For \Winnt\Profiles, set this folder and Check "Replace permissions to all subdirectories" to "Read" (RX) for Power Users and Users Groups.

Now, return to the BOSS folder and uncheck "Replace permissions to all subdirectories" AND "Replace permissions to all files". Now set permissions on this folder to "Change" (RWXD) for Power Users and Users. Note here we are changing the permissions to the BOSS directory only, not the files or subdirectories within that folder. This is done because when a MBB card is to be created,

a .bin file is created in the BOSS directory, and we must give permission for this file to be created by users.

STEP 50

We need to plug a hole where the ODBC password can be found by a reasonably talented computer user. Go to Start->Find and enter "odbccp32.cpl". Once found, right-click on this file and open "properties". Go to permissions on this file, and set permissions to "No Access" for Power Users and Users.

STEP 51

Create a new user called "Election Admin". Set password as "election" (User may change this later). Set Password to "never expires". Assign new user to Power User group only.

STEP 52

Login as "Election Admin". If BOSS and Tally are being installed, run the registry files: boss.reg, tally.reg, and odbc.reg which are found in the Hart Installation Utilities Disk under the \Reg Entries folder. If Ballot Now is being installed, run registry files found on the Hart Installation Utilities Disk under the \Reg Entries\BN folder.

STEP 53

Move the ntUser.dat file from \DAT folder on the Hart Installation Utilities Disk, to /Winnt/Profiles/Default User. After moving the file, make sure that the file is not set to "Read Only". If the system has only Ballot Now installed on it, move the NtUser.dat file found in the \DAT\BN folder.

STEP 54

Move files in \Winnt\Profiles\All Users\Desktop to \Winnt\Profiles\Administrator\Desktop and \Winnt\Profiles\Election Admin\Desktop

STEP 55

Move the 1) Adaptec Easy CD Creator folder, 2) the Administrative Tools Folder and 3) the Hart InterCivic folder found in \Winnt\Profiles\All Users\Start Menu\Programs to \Winnt\Profiles\Administrator\ Start Menu\Programs and \Winnt\Profiles\Election Admin\ Start Menu\Programs.

STEP 56

Remove the contents of all the following folders (but not the folders themselves)

> Winnt\profiles\Default User\Application Data\
>
> Winnt\profiles\ Default User \Cookies\
>
> Winnt\profiles\ Default User \Desktop\
>
> Winnt\profiles\ Default User \Favorites\
>
> Winnt\profiles\ Default User \Local Settings\

Winnt\profiles\ Default User \My Documents\

Winnt\profiles\ Default User \NetHood\

Winnt\profiles\ Default User \PrintHood\

Winnt\profiles\ Default User \Recent\

Winnt\profiles\ Default User \SendTo\

Winnt\profiles\ Default User \Start Menu\ (except \Programs)

Winnt\profiles\ Default User \Start Menu\Programs\

Winnt\profiles\USER\Templates\

Winnt\profiles\All Users\Documents\

Winnt\profiles\All Users\Start Menu\ (except \Programs)

Winnt\profiles\All Users\Start Menu\Programs\

STEP 57

For each program that needs to be installed, (BOSS\Tally\Ballot Now), put a shortcut to the corresponding executables into the path Winnt\profiles\Default User\Start Menu\Programs\ .

STEP 58

While logged in as "Election Administrator" create a new user for each product. For a BOSS product, create a user with the name "BOSS" and the password "RestrictedBOSS". For a Tally product, create a user with the name "Tally" and the password "RestrictedTally". For a Ballot Now user create a user with the name "ballotnow" (this particular user name is important to enter exactly), and the password "RestrictedBN" (The Election Administrators will be able to reset passwords). Passwords on these new users are set to "Never Expire".

STEP 59

Log into all Restricted Users. Only in the case where Ballot Now is installed along with BOSS and/or Tally, after logging into "ballotnow" user, log into Administrator and exchange the NTUser.dat file found in \Winnt\Profiles\ballotnow for the NTUser.dat file found in Hart Installation Utilities Disk in the \DAT\BN folder. Confirm that the products work in these restricted environments. Log into Administrator, and from the /Winnt/profiles/(User Name)/Start Menu/Programs/ folders remove the shortcuts that don't apply to this restricted user (A BOSS user would only be left the BOSS shortcut, the Tally and Ballot Now shortcuts would be removed). Also remove the empty /Winnt/profiles/(User Name)/Start Menu/Programs/Startup folders.

STEP 60

Run Rdisk to make the emergency repair disk.. To Run Rdisk, go to Start > Run > Rdisk.

STEP 61

Disable the Windows keyboard key. To disable the Windows keyboard key, log in as Administrator and run the WinKey.reg file found in the Hart Installation Utilities Disk under the folder \Reg Entries.

STEP 62

Remove the Windows Help functions. Since our requirements include removing any access to the file structure for restricted users, we must disable the Windows help functions available through Start>Help buttons. The Help files include links into the file structure and direct links to various operating system functionality. Unfortunately, in Windows NT 4.0 Workstation there is no way to get rid of the Help button off of the Start bar. To disable Help, find the help file, which is Winnt/system32/windows.hlp, and replace it with a small text file. If windows.hlp is just removed, the OS will allow the user to browse to look for it. When replaced the user will see either nothing of a simple error box if Help is accessed. Note that this will disable help functionality for the entire computer.

STEP 63

Confirm that the restricted users are not able to view the operating system or file structure, outside of the Hart Applications. Confirm that programs all run under all users.