Application Note

NVIDIA nForce-Series Chipsets

Configuring NVIDIA Networking Drivers with Microsoft RIS

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Document Change History

Version	Date	Responsible	Reason for Change
v12	November 6, 2006	CM, DV	Added new features

Install Networking Drivers

This application note describes how to configure NVIDIA® networking drivers when using the Microsoft Remote Installation Services (RIS) to install OS images on NVIDIA nForce®-series chipsets. It also describes using a RIS driver in a Windows Preinstallation environment (WinPE).

Detailed Installation Procedure

The following steps describe the sequence needed for NVIDIA nForce RIS clients on Windows XP, Windows 2000, and Windows 2003 Server.

Ensure that the installed BIOS contains PXE version 201 or greater. PXE version can be seen in the PXE startup banner. A sample PXE startup banner is provided below:

```
PXE Boot Agent 201.xxxx
```

1. Read Microsoft Knowledge Base Article #315279 for details on how to add the OEM Network Adapter Drivers to an RIS image.

   (http://support.microsoft.com/default.aspx?scid=kb;en-us;315279)

2. *This procedure is step 1 of article #315279:*
   If you are installing a 32-bit Microsoft image onto your RIS client, copy the files contained in **`nvris32.zip`** onto:
   `RemoteInstall\Setup\Language\Images\Dir_name\I386`.

   Use **`nvris32.zip`** if RIS client is Windows 2000, or the 32-bit versions of Windows XP or Windows 2003 Server.

3. *This procedure is step 1 of article #315279:*
   If you are installing a 64-bit Microsoft image onto your RIS client, copy the files contained in nvris64.zip onto:
   `RemoteInstall\Setup\Language\Images\Dir_name\amd64`.

   Use **`nvris64.zip`** if RIS client is 64-bit version of Windows XP or Windows 2003 Server.

4. *This procedure is step 3 of article #315279:*
   You must copy the installation package for the NVIDIA NRM driver (that is, the normal Windows networking driver) to:
   `RemoteInstall\Setup\Language\Images\Dir_name\$oem$\$1\Drivers\Nic`.
5. All other steps in article 315279 should be performed as specified.
6. After completing the above steps, you need to restart the boot information negotiation layer or restart the machine.

PXE may now be used to install the OS image onto the RIS client.

Using an RIS Driver in WinPE

The Windows Preinstallation Environment (Windows PE) is a minimal operating system designed to prepare a computer for Windows installation. It can be used to start a computer with no operating system, to partition and format hard drives, and to copy disk images or initiate Windows Setup from a network share.

In theory, we can use the normal Windows network driver in the WinPE environment. The normal network driver is developed as a bus/function driver architecture, so we need to import both bus and function drivers into the WinPE image. In WinPE 2005, for example, we need to run the Drvinst.exe tool twice to add bus and function drivers respectively. Additionally, we need to enable Plug and Play detection functionality so that the network driver can be found in the process of booting WinPE. In the WinPE 2005 case, we need to add /PNP parameters when using the **`Mkimg.cmd`** command to create a Windows PE image. Please refer to the Microsoft Knowledge Base Article # 921440 for details:

http://support.microsoft.com/kb/921440

With the above method, we may find the Plug and Play detection functionality takes a long time to finish the detection process. To reduce the boot time, use the RIS driver instead of the normal Windows network driver. The RIS driver is designed to as non-bus driver architecture so that we don't need to enable Plug and Play detection functionality and the WinPE can identify the RIS driver and load it successfully.

For detailed procedures on how to create a Windows PE image and add a driver to it, please refer to the User's Guide on the Windows Preinstallation Environment (Windows PE) kit. You can get some useful information from the link below about how to deploy the Microsoft Windows Preinstallation Environment from an RIS server by using PXE-enabled clients:

http://support.microsoft.com/kb/304992

RIS Driver Change List

v65.34:

- Supports two or more MAC controllers.
- Supports Windows AMD64 PE environment.
- Supports products up to and including MCP67.

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