Installation, Drivers and Software

Booting from and Using UEFI / GPT Partitions

If your RAID or disk volume is larger than 2TB, you will need to use one of the following methods to use all of the capacity and to be able to boot from the volume:

- Use a standard MBR partitioning method, but create separate smaller volumes inside the RAID. Intel / LSI RAID cards allow you to create a 3TB RAID6 drive group, for example, but then create smaller volumes inside this, for example 500GB and 2.5TB. You would need to use a GPT volume for the 2.5TB volume to use all of the capacity, but could easily boot from the 500GB volume as this can be setup as a traditional MBR (master boot record) volume.
- Use a GPT partition. You will need an UEFI compatible BIOS and a GPT boot compatible operating system, which is normally recommended as being Windows 7 x64 or Server 2008R2 or later.

For more information, please see attached the Intel GPT white paper, available here, or attached.

Alternatively: This subject is covered in depth, here.

Applies to:

- Server or Workstation systems with a hard drive or RAID volume larger than 2TB.

How to Set Up Remote Management on Servers with Management Modules (RMM4)

Selected models of servers come with or can be upgraded to include a remote management module, such as the Intel RMM4. Use the instructions below to setup your remote management module.

Prerequisites

You will need the following:

- A static IP address for the management connection.
- The system being used for remote KVM control will need to have Java installed.

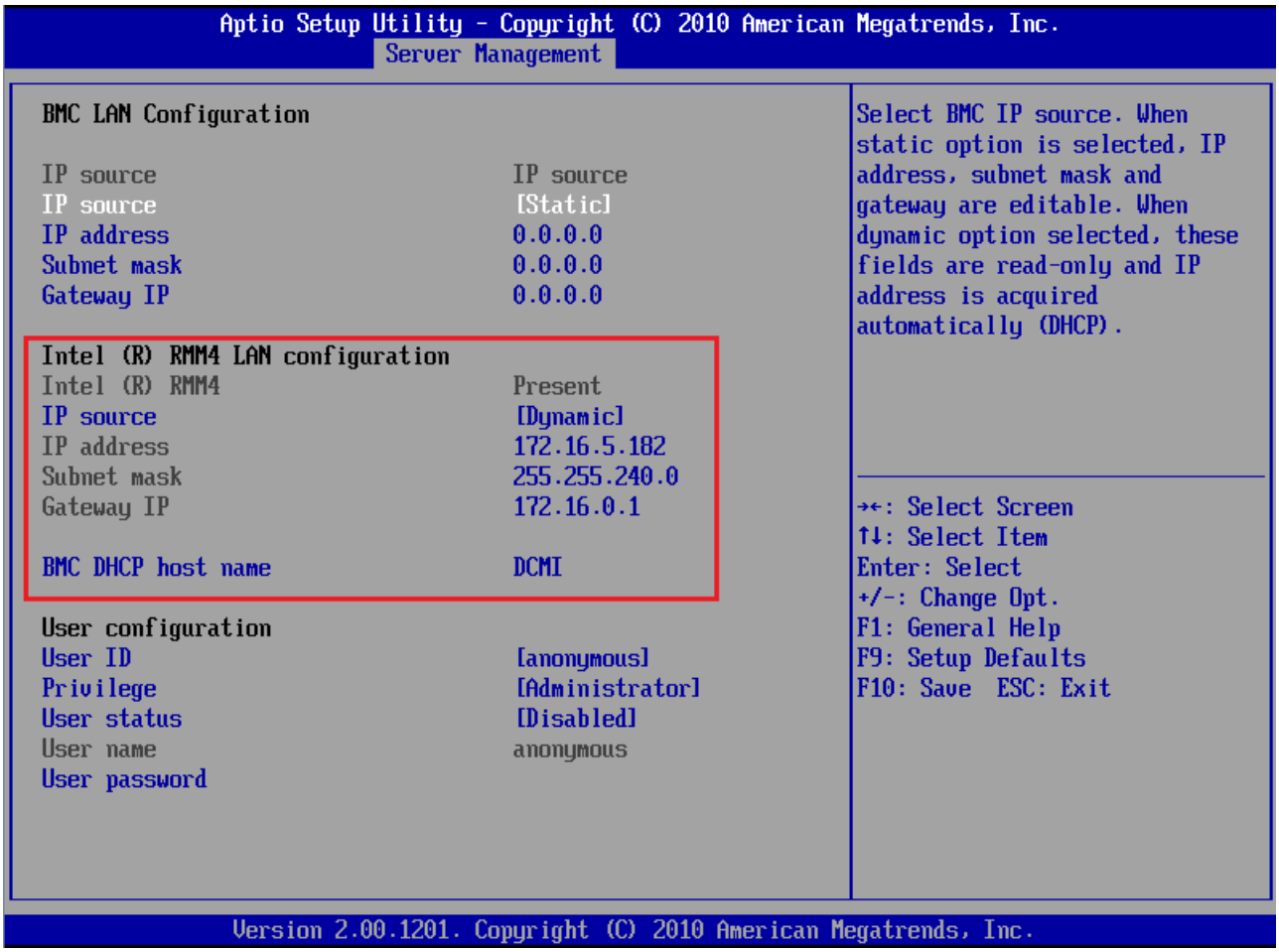
Recommendations:

- Use the RMM4 module option with a dedicated NIC management port where possible
- If you dont have the dedicated management NIC (RMM4 Lite) the motherboards first onboard port can be use for management connectivity. In this instance, we recommend against including the management enabled port in a 802.3ad static or dynamic trunk or team.

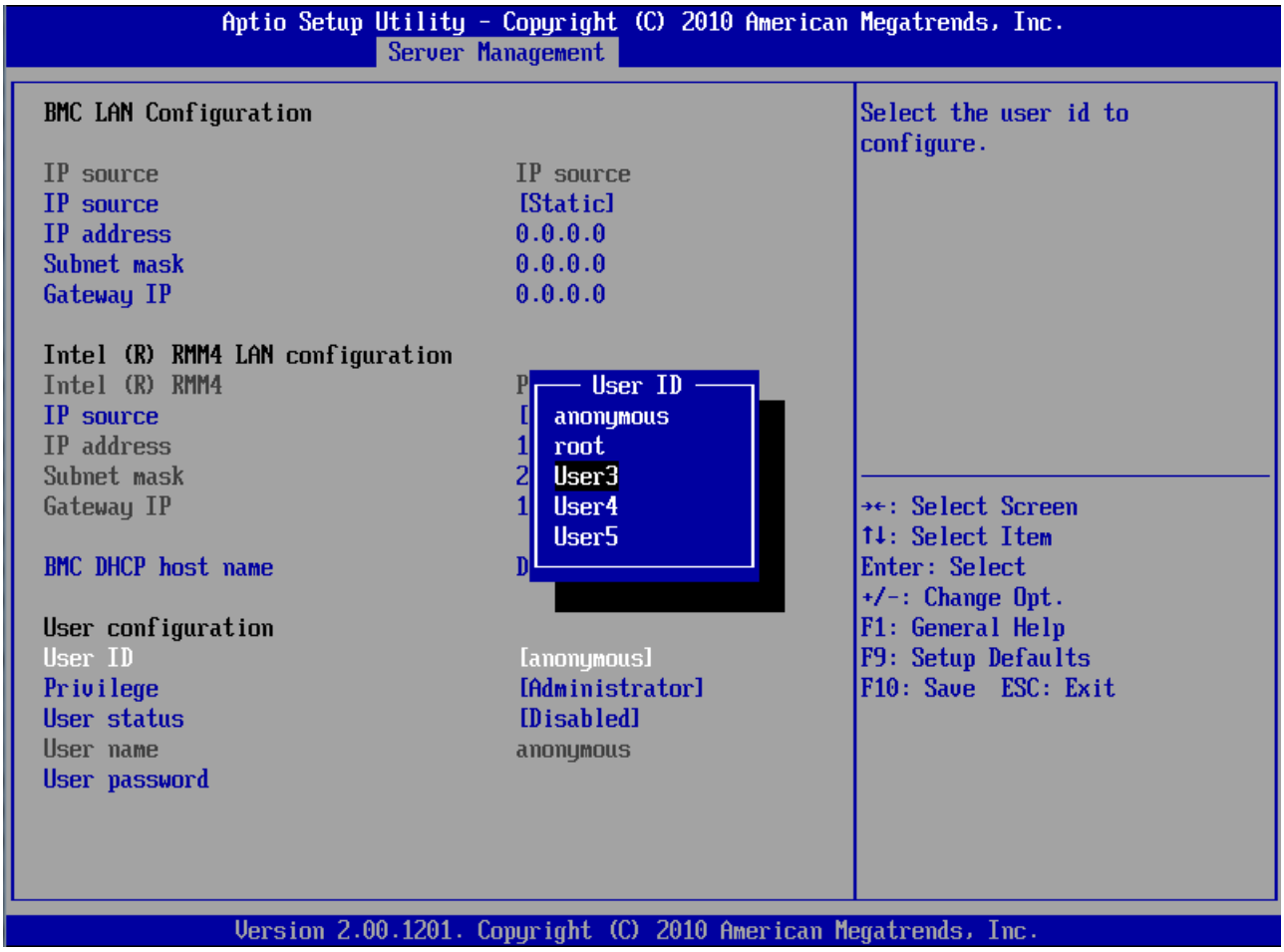
Instructions

- Boot into the BIOS using F2 from power-on.
- Go to the Server Management Menu
- Go to the BMC LAN Configuration Menu

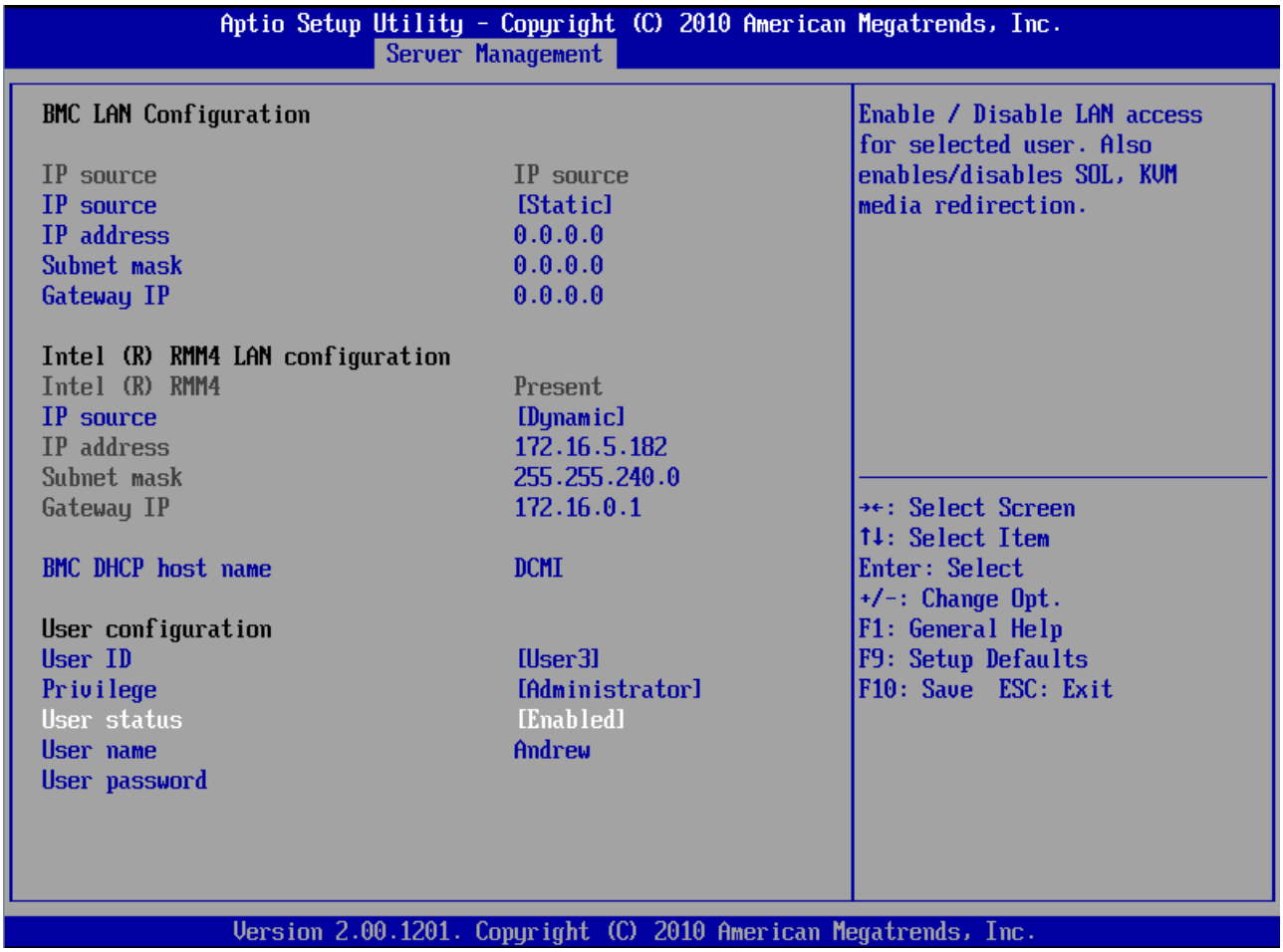
- Configure the LAN settings as required. If you have the RMM4 module with the dedicated management port, it is recommended that you configure the Intel (R) RMM4 LAN Configuration settings only, and leave the BMC LAN Settings blank.
- The example below shows the RMM4 LAN settings configured as dynamic, with a host name configured to enable the device to be found easily on the network. However, static settings are recommended with a DNS Host entry configured on your DNS server.



- To enable the remote connection, a user account must be configured. We recommend you leave the default accounts and instead configure User3. Go down to User ID and select User3 from the list.



- Then set the privilege status - for example, to Administrator, set the user status to Enabled, and then set a username and password. The user name and password are both case sensitive.



Connection

To connect to the management console, use a web browser and connect to the IP address or hostname you specified.

For example:

http://172.16.5.182

or

http://dcmi

You will need to have Java installed to use the remote KVM (keyboard/video/mouse) and media redirection.

Getting More Help

For more information, see the Intel RMM4 user guide or contact Stone support.

Applies to:

- Server and workstation products equipped with an Intel RMM3 or RMM4 remote management module.

Intel RAID Manual

Intel have produced a manual which covers the setting up and basic maintenance of their RAID systems, primarily those based around the LSI RAID stack. This includes controllers such as the RMS25CB080 and RS2BL080.

The manual can be downloaded here, or attached.

Applies to:

- Intel / LSI Hardware and Firmware RAID Products

Technical Product Specification Documents

Intel produce these TPS documents for each family of server or workstation motherboard. Use these documents to:

- Identify supported families or versions of processors.
- Find out supported memory configurations and DIMM population instructions.
- Determine the controller or type of SATA ports available.
- Find out the configuration of PCI Express Slots.
- Get details about all connections, headers and jumpers.
- Locate and use diagnostic LEDs.

Note 1: Intel server boards often have slightly different names for the number of LAN ports that they have. For example, the S2400GP2 has two LAN ports, and the S2400GP4 has four LAN ports, and they both belong to the S2400GP Family, for which you can use the S2400GP Technical Product Specification document.

Note 2: Always check the Intel web site for updated documents.

Intel Server Systems

Intel Server Systems include Intel server or workstation motherboards. The second part of the Intel Server System model code indicates which motherboard is fitted. For example, the R2000GZ series of Intel Server system indicates that it includes an S2600GZ motherboard. The R2000GZ series includes different 2U models with different drive bay configurations.

Spares / Accessories List and Configuration Guide for Server Systems

These guides are available for Intel Server systems to allow research into the spare parts and accessories that are available for that model family.

S2600GZ / GL - R1000GZ/GL Server System and R2000GZ/GL Server System - Spares / Accessories List and Configuration Guide

S2600WT - R1000WT Server System and R2000WT Server System - Spares / Accessories List and Configuration Guide

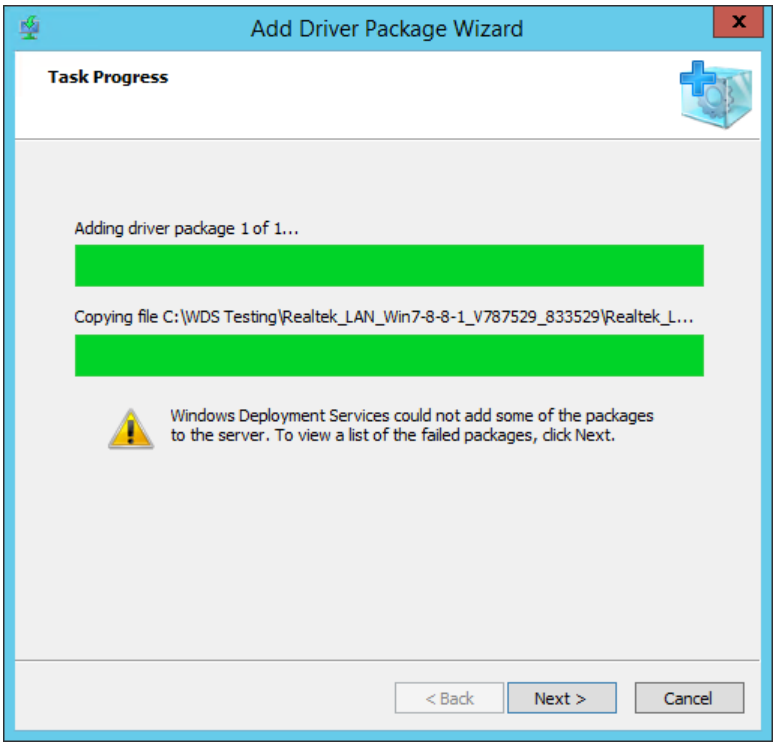
Applies to:

- Stone / Intel Xeon Servers and Workstations

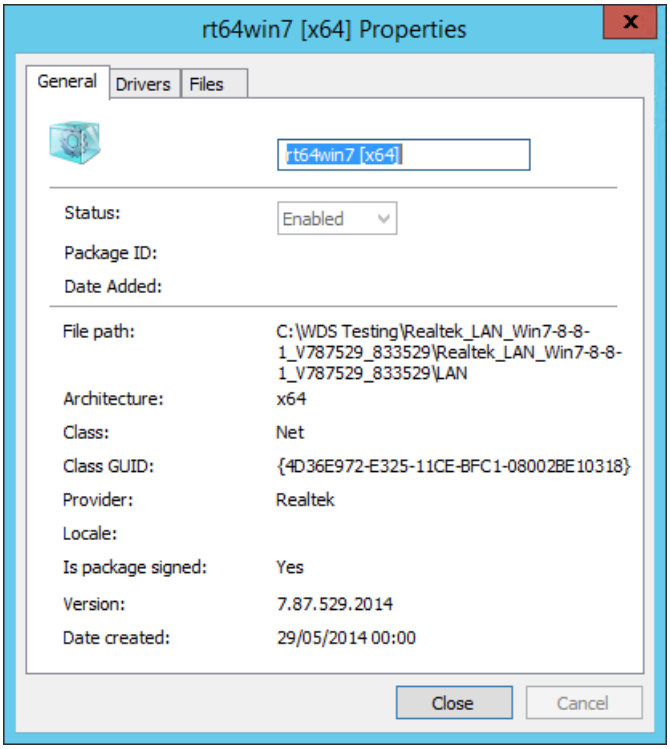
Windows Deployment Services (WDS) May not Import Realtek LAN Drivers

Problem

Newer versions of the Realtek LAN Driver, from around mid-2014 onwards, may fail to import into Windows Deployment Services, either WDS 2008R2 or WDS 2012.



WDS reports that the package addition failed. However, no actual error code or meaningful reason for the failure is displayed.



Cause

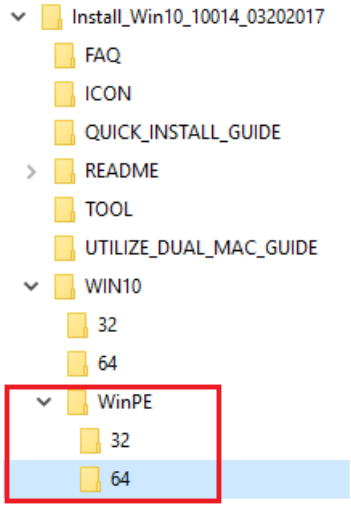
The root cause appears to be a problem with the WDS Jet Database and either the size of the Realtek LAN driver, or some particular information inside the driver INF. If you use the WDS Powershell utilities to try and import the driver an error code is return which indicates that a database error is being generated, with a record being "too big".

Resolution

Server 2012

There is one full resolution for this issue and three alternatives should your situation require it. However with the release of the April 2016 Realtek driver, only the full resolution should be required.

- Obtain the April 2016 Realtek drivers or newer and use the drivers in the WinPE or WDS sub-folder. These drivers are also now available in our SCCM / WDS packs.



Server 2008R2

As of April 2017, some x64 versions of the Realtek driver, even the WinPE version, do not import into WDS for Server 2008R2. There is no resolution for this apart from upgrading your Server infrastructure or the work-arounds below.

Other Work-Arounds

1. If using MDT, import the driver directly into MDT and then rebuild your Lite-Touch image.
2. Alternatively, if supported by the hardware you have, use an older version of the driver, such as this one from August 2013 for Windows 7.
3. Or, manually add the driver to the boot WIM file manually for situations where you are capturing or deploying images.
4. Finally, for network based installs, whilst you can add the driver to the boot WIM file, you could to manually deploy the Realtek LAN driver to the new installation. Note however that joining the machine to the network may not be possible until this has been done. This method is not suited to large deployments.

Overview of Adding a Driver to a WIM file

1. Download and Install the latest Windows Assessment and Deployment Kit (ADK) to your PC. This can be installed on the WDS server however its not normally recommended, especially if the server is a domain controller. As of 13/4/17, the latest ADK is 1703 for Windows 10 (the Windows 8.1 Update ADK is here).
2. Copy the boot WIM file to your ADK PC. **Always keep a backup copy of the original WIM file.**
3. From the Deployment Tools command prompt, mount the WIM file to a folder. The destination folder must exist, and should be empty:

```
Imagex /mountrw "d:\wimwork\boot.wim" 1 d:\output
```

4. Now add all of the drivers that you want. Put all of the drivers in a Drivers folder as below:

```
Dism /Image:d:\output /Add-Driver /Driver:d:\drivers /Recurse /ForceUnsigned
```

5. (The /ForceUnsigned switch will allow all drivers to be added, whether signed or not).
6. Now commit the changes back to the boot WIM file:

```
Imagex /unmount /commit d:\output
```

7. Now you can copy the WIM file (d:\wimwork\boot.wim in the example) back to the WDS server and test to see if the driver addition was successful.

Note: Always ensure that the finished, built machine has the latest Realtek network driver on it, before handing it over to the user. The temporary 2013 Realtek network driver should not be left running on deployed machines.

Applies to:

- All Stone desktop and laptop products with Realtek LAN adapters.

