



NeXT[®] Hardware Configuration and Requirements ver.7 6May2010

This document is provided to answer questions regarding the hardware and software requirements necessary to support a successful NeXT installation. Supported hardware and software have been tested with NeXT and are expected to function properly. DataWorks will address any questions or problems that you encounter when you use this product version with the supported hardware and software. Individual configuration issues (e.g., number of users) can affect actual requirements. The proof is always in the pudding, not the recipe.

This document gives our best knowledge of what has worked for other sites: this document should be seen as a starting point in designing and implementing your specific implementation. During the Site IT Survey, we will provide our best judgment regarding how these details might be altered to fit your situation. Nothing that we suggest should be taken as a promise on our part that what we suggest will definitely work. What we promise is that we will work with you to provide your users with the best retail inventory management experience we, DataWorks and you working together, can provide them.

DataWorks can provide application hosting for you via our datacenter if you do not have the resources to procure and manage a server located at your facility.

NeXT Application Server Hardware Requirements

Component	Requirement
Server and Processor	Intel or Intel Compatible Server with two dual-core 2-GHz processor required; 2.0-GHz or faster dual or quad core processors recommended.
Memory	4GB of RAM required; 4GB or more recommended for 64bit systems.
Hard Disk	20-40 GB of available local hard-disk space. Hardware redundancy recommended.
Display	Super VGA (1024x768) or higher resolution video adapter and monitor
Network	100MB or Gigabit LAN connection

NeXT Application Server Software Requirements

Component	Requirement
Microsoft Windows Operating System	Windows Server 2003 SP2, Windows Server 2008, 32bit & 64bit compatible.
Internet Explorer	Microsoft Internet Explorer 7.0 or later
Other Software	Microsoft SQL Native Client for SQL 2005 or SQL 2008 and associated Driver

NeXT can be installed on a Microsoft Windows Server running Terminal Services or in a Citrix farm configuration. In this environment a single copy of the program is installed on the server. Users will access the application via Microsoft Remote Desktop Connection or a Citrix Client. Fat clients (desktop PC's) may also be used to access the application. Below are the specifications for a fat (desktop PC) configuration.

NeXT Application Desktop Hardware and Software Requirements

Component	Requirement
Server and Processor	Intel or Intel Compatible PC with a dual-core 2-GHz processor required; 2.0-GHz or faster dual or quad core processors recommended.
Memory	3GB of RAM required; 4 GB maximum
Hard Disk	20-40 GB of available local hard-disk space.
Display	Super VGA (1024x768) or higher resolution video adapter and monitor
Operating System	Microsoft Windows XP Pro SP1 or later, Windows Vista, Windows 7, 32bit or 64bit compatible
Internet Explorer	Microsoft Internet Explorer 7.0 or later
Other Software	Microsoft SQL Native Client for SQL 2005 or SQL Native Client 10.0 for SQL 2008
Network	100MB or Gigabit LAN connection

SQL Server Database Hardware Requirements

Component	Requirement
Server and Processor	Server with two dual-core 2.0-GHz processors required; 2.0-GHz or faster dual or quad core processors recommended.
Memory	4GB of RAM required; 8GB and above for 64bit operating systems.
Hard Disk	20-40GB of available local hard disk space. Hardware redundancy recommended.
Optical Drive	CD-ROM or DVD-ROM drive
Operating System	Windows Server 2003 or Windows Server 2008 (32bit or 64bit)
Display	Super VGA (1024x768) or higher resolution video adapter and monitor
Network	100MB or Gigabit LAN connection required between application server and SQL server.
SQL Requirements	SQL 2005 SP2 or SQL 2008 with following recommended settings. See Appendix A.

Additional Considerations

- It is highly recommended to deploy the NeXT application on its own hardware platform. A lot of times, it is requested that the NeXT software be able to run on existing servers. This is possible; however, this usually results in increased problem resolution should a problem occur.
- For customer sites that have 5 or less users, the NeXT application and SQL database can reside on a single server. For any sites over the 5 user limit, the application server and SQL database server must reside on two separate servers.
- From the user's perspective, a 17 inch monitor with a 1024 x 768 resolution should be used at minimum.
- Printers – Reports generated from the application print to the clients default printer. The appropriate printer drivers should be installed on the server. The ticket printers use the "generic/text" printer driver.
- A mapped network drive will need to exist between the point of sale server and the NeXT server.
- If it is decided that hosting is a more efficient option, an FTP connection to the point of sale will be required for data transfer.
- Users must be assigned adequate permissions to create, alter, and delete records on the SQL database, as well as access extended properties of the database.

- Users on Server 2008 systems must have adequate permissions to access Win32Api/WMI functions on that server, in order to perform actions like knowing which version of NeXT they are using, or identifying the username and server in order to point to the right printers for that user from within NeXT.
- The NeXT Service performs needed actions in support of retail activities (e.g., interfacing with the POS system). This Windows service should be installed on a server that has continuous access to the SQL Server, and is directly accessible to DataWorks Support. Where NeXT is presented through Terminal Services/Citrix, the service can reside on the same machine.
- Virtual Machine sessions are not supported for any portion of the NeXT installation. This is due to the very heavy data demands of an application that is both transactional (data entry) and data analysis (reporting). DataWorks is exploring Virtual Machine environments, but to this point have seen so many failures in VM configurations that we are unable to recommend a known good installation configuration.
- For configurations where users will run NeXT from their desktop computers (contrasted with Terminal Services/Citrix), in order to reduce problems associated with updates within Versions and upgrade between versions, DataWorks makes available automatic updates from within your network. Once you have approved the update or upgrade, a single install to a network-accessible Update Point is made, and all machines will update automatically as users log in. This is a great time saver for site IT personnel, as well as a convenience for users.

Support Considerations

- DataWorks provides telephone and email access for problem reporting on a 24/7 basis. Problems are handled on first-come, first-served during the business day and are prioritized for after hours support.
- Remote access to the NeXT server or the Point of Sale Server is established using Citrix's GoToAssist and GoToMyPC products provided by DataWorks. Other access methods may hinder problem resolution and will be subject to additional fees. GoToMyPC allows immediate access by Support, while other methods requiring actions by site personnel may well lead to delays in resolving issues.
- NeXT proactively sends error reports for the NeXT program and service, and for missing sales receipts, on a daily basis, using an email account at dataworksinc.com, and sent to an email account at dataworksinc.com. If these emails are blocked by security filters on site, the ability of Support to solve issues in the most timely fashion is hindered: thus we recommend that security filters be configured, if possible, to allow these emails to be sent. If that can not be done, Support has the ability to turn off automatic support emails.
- A high speed permanent internet connection is required.
- DataWorks support will need to have administrative rights on the NeXT server.
- DataWorks support login must have the ability to access the SQL Database with a default dbo schema, in order to run upgrades within versions, and between versions.
- DataWorks support will need access to SQL Server Management studio with permissions to create the NeXT database, perform backups, perform restores, and create and alter extended properties.

If you have any questions regarding hardware or software requirements please contact our customer support center at 239-444-1030 and choose option 1.

Appendix A

SQL Server Performance Modifications

Modifications made to the Application Server OS:

- Change system page file from dynamic to static (4092MB)
- Turn off DEP via boot.ini modification (NoExecute=AlwaysOff)
- Physical Address Extension activated via boot.ini (/PAE)
- Antivirus turned off - modifications can be made to AV to ignore certain SQL processes
- Change OS priorities for Programs and best performance
- SQL 2005 Native Client will need to be installed for ODBC connection to SQL server data

Modifications to SQL Server :

- Enable AWE (32-bit only)
- Set minimum and maximum SQL memory standards depending on physical memory in server.
- Set database and log file to 1GB for initial size
- Transaction Log set to "AutoGrow"
- Database set to "AutoGrow" in 100MB increments
- The account(s) accessing the SQL database will need (dbo) rights to the database

Other Modifications:

The following registry settings are to be applied to both the SQL server, and all application servers. This is a Microsoft Knowledge Base Article (KB319502) explaining the registry modification cause and resolution:

Increase the port range that is used for anonymous ports to approximately 20,000 ports (for example) by modifying the MaxUserPort registry key. Windows uses the conventional BSD range of 1024 to 5000 for its anonymous (ephemeral) port range. You can set only the upper bound of the ephemeral port range. To modify the MaxUserPort registry key, follow these steps:

- Start Registry Editor (Regedt32.exe).
- Locate the MaxUserPort key in the registry:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters
- On the Edit menu, click Add Value, and then add the following registry value:
Value Name: MaxUserPort
Data Type: REG_DWORD
Value: 65534 (for example)
Valid Range: 5000-65534 (decimal)
Default: 0x1388 (5000 decimal)

Description: This parameter controls the maximum port number that is used when an application requests any available user port from the system. Typically, ephemeral (that is, short-lived) ports are allocated between the values of 1024 and 5000 inclusive.

d. Change the timeout on the connections from 240 seconds (the default) to any length from 30 seconds to 300 seconds (30 seconds recommended). Use the TcpTimedWaitDelay registry parameter to change this value. To do this, start Registry Editor (Regedt32.exe), locate the following key in the registry, and then modify the value:

HKEY_LOCAL_MACHINE\System\CurrentControlSet\services\Tcpip\Parameters

TcpTimedWaitDelay

Key: Tcpip\Parameters

Value Type: REG_DWORD-time in seconds

Valid Range: 30 (decimal)

Default: 0xF0 (240 decimal)

Description: This parameter determines the length of time that a connection stays in the TIME_WAIT state when the connection is being closed. While a connection is in the TIME_WAIT state, the socket pair cannot be reused.

Microsoft Active Directory Integration and SQL Server Access:

The following guidelines will outline the Microsoft Active Directory integration and SQL Server database access for users accessing the DataWorks Inc. database. The preferred method is Active Directory integrated logins as it is easier from an administrative standpoint to add/remove users from a particular Active Directory Group.

The SQL Server database server roles should be set to <public> while the Active Directory Group should have db_owner rights to the DataWorks Inc. database.

The Active Directory Group will need to be setup prior to installation so the correct access will be in place for the installation.

DataWorks Inc. Next software requires a network file sharing location accessible to all users of the NeXT system. This directory is required for NeXT to operate as it holds all internal security tables for the NeXT application. This file share location should be centrally located for all users, and all NeXT users must have <FULL> rights to that location.

For Windows Server 2008 implementations, users will need to be given explicit access to the DataWorks folder. This can be assigned using the same Active Directory Group that will be used to SQL database access. This group will need <Full> rights to the folder.

Citrix/Terminal Services Configurations:

Citrix Printing: A policy for printing should be setup to allow auto-creation of all printers on the workstation. This policy should try and use the Windows Native driver, but then use the Citrix Universal driver if the Windows Native driver is unavailable.

Terminal Services: Terminal Services will need to be setup prior to installation with the appropriate rights for users accessing the NeXT application. Access can be granted via the Environment Tab in the users Active Directory properties. A terminal server-licensing server will also need to be active with the appropriate number of terminal server CAL's for the number of users.

DataWorks Inc. is not responsible for setting up and configuring the application delivery method (Microsoft Terminal Services or Citrix), but we can provide tips and best practices as to what works well with our application. We have developed

benchmarks for performance that we know provide a good window into performance for any installation. In the end, therefore, it will be the performance of the application against those benchmarks that determine whether we can certify a given installation as supportable by our support staff.

Customer Checklist of Responsibilities Prior to DataWorks NeXT Installation:

All modifications listed in Appendix A must be performed on designated servers by customer IT staff. This covers the following changes/modifications:

- 1.) All operating system modifications.
- 2.) All SQL access and Active Directory access groups.
- 3.) Any SQL performance and registry modifications.
- 4.) All network access and file shares required by the DataWorks Inc. NeXT system.
- 5.) Application delivery method such as Microsoft Terminal Services or Citrix.

Appendix B

Representative NeXT Network Configuration

