

Novell Web and Application Services

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OVERVIEW GUIDE



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Patents Pending.

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Overview Guide

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Online Documentation: To access the online documentation for this and other Novell products, and to get updates, see www.novell.com/documentation.

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About This Guide

Novell® Web and Application Services (NWAS) is a collection of open source and Novell technologies integrated with NetWare® 6.5 for use in building, deploying, hosting, and utilizing Web sites and Web applications that speed up business processes while keeping sensitive data secure.

This guide introduces you to NWAS and its components, and how you can begin using them to meet the demands of your business. It is intended for Web or network administrators who install and manage Web site content and applications. Developers might also find the information in this overview helpful. It is divided into the following sections:

- ◆ Chapter 1, “Overview: Novell Web and Application Services,” on page 11
- ◆ Chapter 2, “About Installing NWAS Components,” on page 21

Additional Documentation

Each NWAS component discussed in this Overview and Installation Guide has its own administration guide. For details about how to manage each NWAS component, refer to the following documentation:

- ◆ *Apache Web Server Administration Guide*
- ◆ *Tomcat for NetWare Administration Guide*
- ◆ *Novell exteNd Product Documentation* (<http://www.novell.com/documentation-index/index.jsp?category=exteNd>)
- ◆ *NetWare Web Search Server Administration Guide*
- ◆ *MySQL on NetWare Administration Guide*

Documentation Conventions

In this documentation, a greater-than symbol (>) is used to separate actions within a step and items within a cross-reference path.

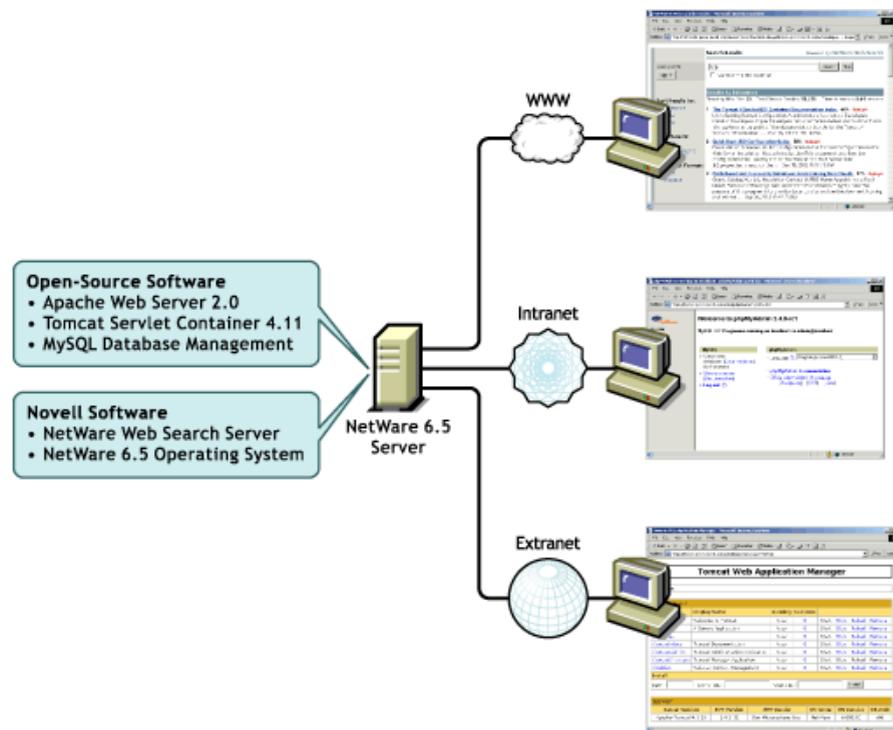
Also, a trademark symbol (®, ™, etc.) denotes a Novell trademark. An asterisk (*) denotes a third-party trademark.

1

Overview: Novell Web and Application Services

Novell® Web and Application Services (NWAS) is a collection of open source and Novell products integrated with the NetWare® 6.5 operating system that let you build, deploy, host, and utilize Web sites and Web applications that speed up business processes without jeopardizing the security of business information.

Description: NWAS Products Combined to Host an Array of Open Source or Custom Built Web-Based Business Solutions for Employees, Customers, and Clients.



This overview introduces you to the key features and benefits of NWAS, how its individual components work together, and how they are used by NetWare 6.5.

Features of NWAS

When used together, NWAS products let you host Web sites and deploy Web applications that you can either build yourself or download from the World Wide Web.

With NWAS, you can

- ◆ Host multiple Web sites on a single NetWare server

- ◆ Manage all instances of the Apache Web server from one interface using the new Apache Manager (regardless of what platform they are running on in your network)
- ◆ Choose from hundreds of free Web applications that can be downloaded from the Internet and run on your NetWare 6.5 server
- ◆ Build and host your own Web database applications
- ◆ Choose from five popular scripting languages to build your own dynamic Web content
- ◆ Build powerful Web applications and services using the new Novell exteNd Application Server, which includes SOAP and IDDI components, as well as rapid application development support and application deployment capabilities
- ◆ Add search and print functionality to any Web site, anywhere on the World Wide Web or on a company intranet

Benefits of NWAS

From hosting simple Web pages to hosting large Web applications and services, NWAS has the technological components you need. Each open source technology offers an important building block that allows you to build the solutions that best meet your business needs.

Some of the key benefits NWAS has to offer include:

(**need help in summing up the most important and enticing benefits; here are a few that I thought of:)

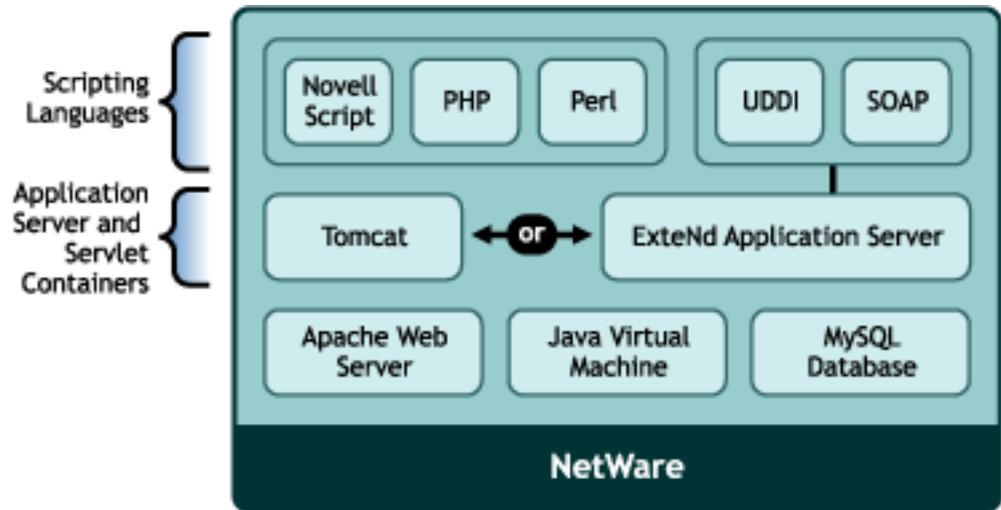
- ◆ Open source components help you steer away from vendor lock-in and proprietary solutions; applications that you develop can run on any other J2EE* compliant platform, including UNIX* and Linux* operating systems.
- ◆ Valuable services for end users with that enhance personal and team productivity.
- ◆ A strong J2EE and open source development model.
- ◆ A broad range of industry standard API sets.
- ◆ A broad selection of development tools and deployment models for developers. This provides tremendous flexibility in those cases where IT organizations decide to re purpose their NetWare serves.
- ◆ Lower IT spending because open source products are free and platform independent.

Basic Components of NWAS

The components of NWAS offer everything you need to host dynamic Web content and Web applications. Additional components also included with NetWare 6.5 can be added to your NWAS solution. For example, if you are going to integrate existing software using Web services technologies, you would add SOAP and UDDI.

The following diagram shows the basic architecture of NWAS components and includes all other components available in NetWare 6.5 that you can use to build Web applications and services.

Figure 1 General Architecture of Key NWA Components and Other Available Technologies.



The following sections introduce each NWA component.

Apache Web Server 2.0

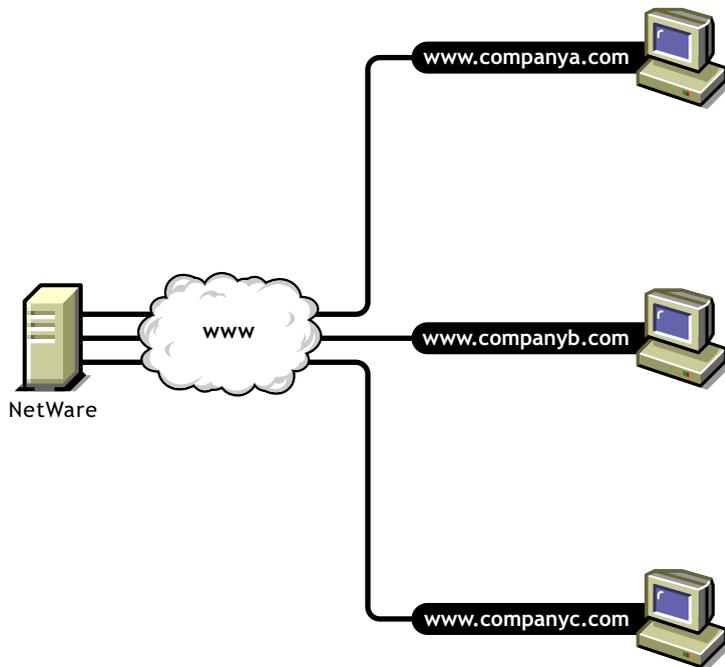
The Apache Web Server 2.0 serves as the foundation Web server upon which you can build Web sites and host Web applications for use in your business.

Apache is the Web server of choice for more than 67% of all Web servers being used on the World Wide Web today. Its popularity comes from the fact that it is the most reliable and secure Web server available. It runs on all major platforms, is capable of hosting even the most complex Web sites and can scale to handle thousands of simultaneous connections.

Here are some of the key uses and benefits of using Apache on NetWare:

- ◆ Provides a highly reliable and fast Web server for hosting simple or complex Web sites.
- ◆ Offers tight integration with eDirectory™ and Secure Sockets Layer (SSL) through the use of a customized NetWare specific Apache module, providing a highly secure method for sharing sensitive company information over the Internet.
- ◆ New Apache Manager tool that lets you configure a single Web server, or a host of Web servers running on multiple platforms, all from a single interface.
- ◆ Is pre configured to work with Jakarta-Tomcat, the servlet container created by the Apache Foundation, which can be used to host servlets and JavaServer Pages™ (JSPs™) for automating business processes.
- ◆ Compatible with the new Novell exteNd Application Server for deploying Web applications and Web services.
- ◆ Ideal for Web application development and testing.
- ◆ Lets you set up multiple virtual hosts for hosting multiple Web sites (with their own domain names) all from a single installation of Apache. (See [Figure 2, “Apache Running on NetWare 6.5 and Hosting Multiple Web Sites, Each With Its Own Domain Name.”](#) on page 14.)

Figure 2 Apache Running on NetWare 6.5 and Hosting Multiple Web Sites, Each With Its Own Domain Name.



For information about installing and using the Apache Web server, see the *Apache Web Server Administration Guide*.

Scripting: Support for PHP, Perl, Novell Script, NSP, and UCS

NetWare 6.5 provides a choice of scripting languages and the engines to run them which you can use for the development of Web applications and administration utilities.

Scripting simplifies the task of developing NetWare based applications and is much easier than writing NLMs™ using C or C++.

The scripting technologies integrated with NetWare 6.5 include industry standard PHP, Perl, Novell Script for NetWare, Novell ScriptPages (NSP), and Universal Component System (UCS).

The scripting engines must be enabled in Apache in order to use them. (See **Enabling Scripting Modules** in the *Apache Web Server Administration Guide*.) For more information about using these scripting languages, see the [Novell Developer Kit \(http://developer.novell.com/ndk\)](http://developer.novell.com/ndk).

Web Search Capability: NetWare Web Search Server

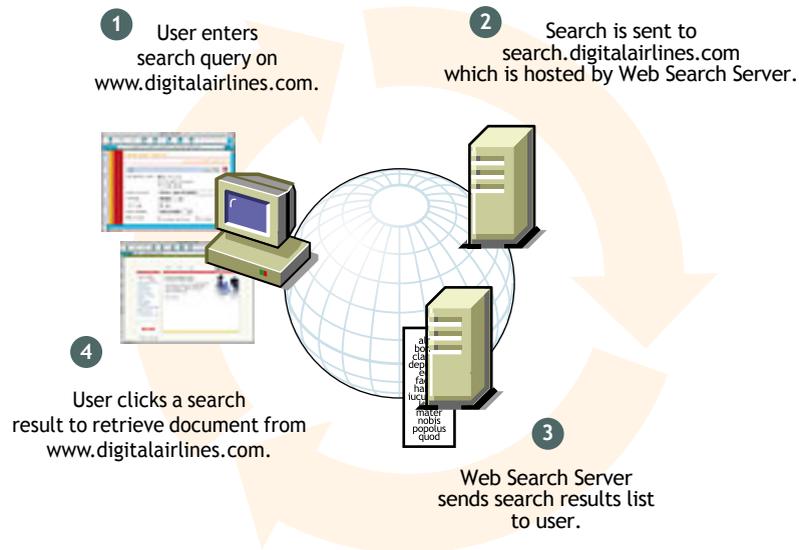
No Web solution is complete without capable searching functionality that provides users with a method for finding information they need, when they need it.

NetWare Web Search Server lets you add search and print functionality to any Web site, anywhere on the World Wide Web or on a company intranet. You can use it on your own enterprise-wide Web site or to host search services for business partners or clients.

Visitors to your Web or intranet site enter search terms in the Web Search form you place on the pages of your Web site. The search term is used to find matches contained in Web Search indexes

you create using the Web Search Server Manager, a Web-based management utility. Search results, including matching URLs are sent back to the user's Web browser.

Figure 3 How NetWare Web Search Server Handles a User's Search Query



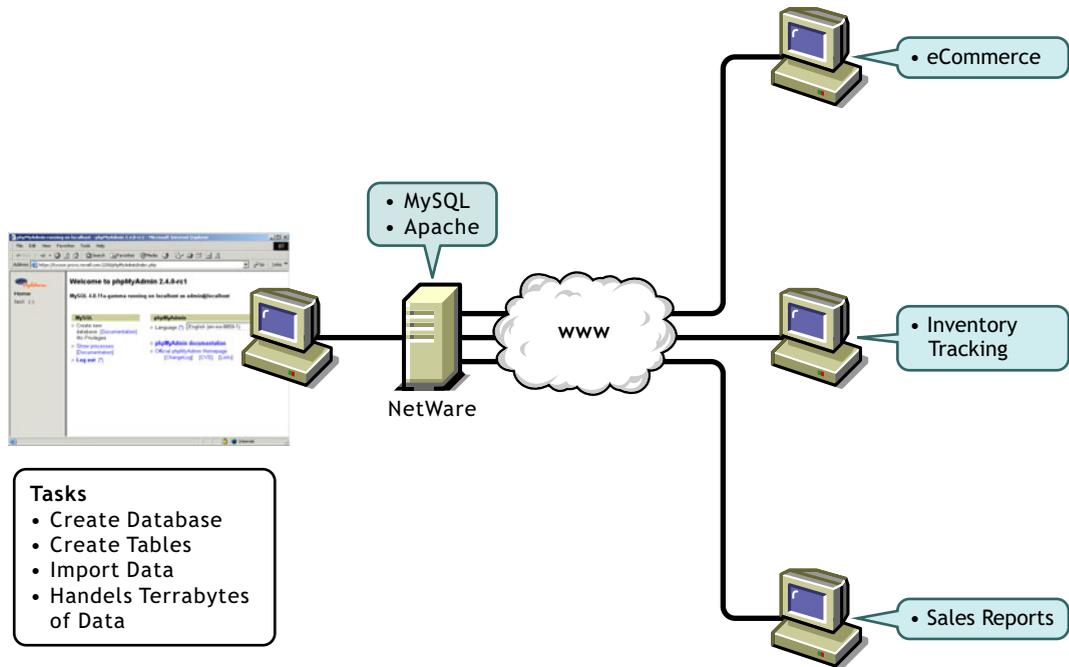
For more information about installing and using NetWare Web Search Server, see the *NetWare Web Search Server Administration Guide*.

Web Databases: MySQL

MySQL is an open source, structured query language (SQL) database. When combined with a Web application, MySQL serves as a very reliable and scalable database for use in hosting eCommerce and business-to-business Web applications.

The following diagram shows how MySQL can be used to host Web database applications such as eCommerce or inventory tracking.

Figure 4 MySQL and phpMyAdmin: Hosting Several Web Database Applications, Such As eCommerce.



For more information about installing and using MySQL, see the *MySQL on NetWare Administration Guide*.

Web Applications: Jakarta-Tomcat Server or Novell exteNd Application Server

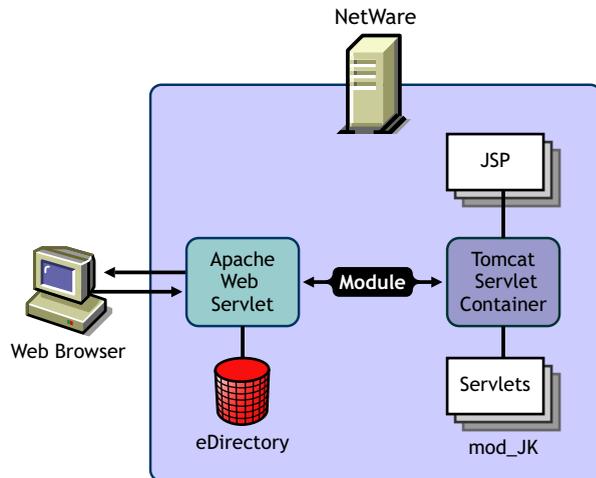
When you need greater processing power beyond what scripting has to offer, NetWare 6.5 offers two choices: Jakarta-Tomcat and Novell exteNd™ Application Server. Which one you choose depends on what you need. For example, if you need Java* API support beyond servlets, JSPs, tag libraries, or basic Java Bean components, either immediately or in the future, you should select the Novell exteNd Application Server. Also, if you are going to use any of the high-end development tools included with NetWare 6.5, such as the Novell exteNd Director™ or Composer™ products, exteNd is the better choice because Tomcat is not supported by these tools.

However, if you need only very basic Java servlets and JavaServer Pages* (JSPs*) and you do not plan to migrate to a more robust solution, you should select Tomcat. Tomcat is also the better choice if you are relatively new to, or inexperienced with, Java programming.

Jakarta-Tomcat

The Jakarta-Tomcat server is an open source, Java-based Web application container created to run servlet and JavaServer Page Web applications. It is the official reference implementation for the Java Servlet and JSP technologies.

Figure 5 Tomcat Working Together With Apache to Deliver Dynamic Web Content to the Consumers of Your Web Site Content.



Tomcat is very stable and includes all of the features of a commercial Web application container.

Tomcat 4.1, the version included with NetWare 6.5, implements the Java Servlet 2.3 and JSP 1.2 specifications.

For more information about installing and using Tomcat, see the *Tomcat for NetWare Administration Guide*.

Novell exteNd Application Server

When scripting or Web application hosting with Tomcat are not robust enough to build the solution you need to build, or when you need to employ more sophisticated Web services using SOAP and UDDI, the Novell exteNd Application Server provides the application hosting power you need.

(The following diagram shows how the Novell® exteNd Application Server can host enterprise applications and be used to integrate disparate software systems in your company, as well as allow you to conduct ebusiness with your partners through the use of UDDI, SOAP, and WSDL.)

The Novell eXtend Application Server is a comprehensive, J2EE certified platform for building and deploying enterprise-class Web applications. It supports the full Java 2 Enterprise Edition standard: JSP, Enterprise JavaBeans* (EJBs), and all other J2EE 1.3 components and technologies.

For more information about installing and using exteNd, see the [Novell exteNd Application Server documentation \(http://www.novell.com/documentation/lg/extendas/index.html\)](http://www.novell.com/documentation/lg/extendas/index.html).

Putting It All Together

When you combine all of the NWAS components, you have a complete Web and application solution. Choosing which components you need begins with determining what the needs of your organization or company are and then deciding which components to use to fill the need.

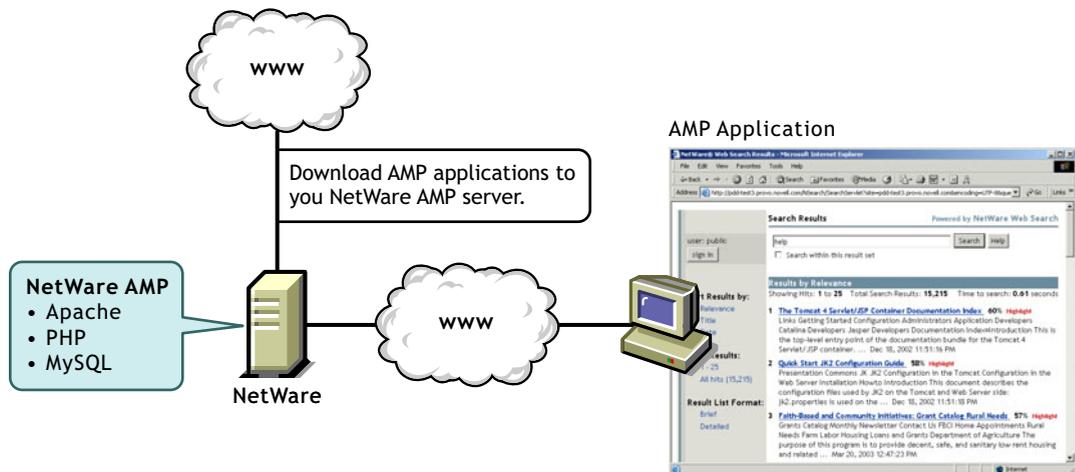
This section contains some sample combinations of NWAS components. The quickest and simplest solution is Novell AMP.

Novell AMP: Apache, MySQL, PHP, and Perl

One of the NetWare 6.5 dedicated installation options is Novell AMP (see “[Set Up a Dedicated or Special Purpose NNAS Server](#)” on page 21). Combining the HTTP power of Apache with the database power of MySQL and the flexibility of PHP lets you build very fast and functional Web applications. But even better, there are thousands of applications available for download from the World Wide Web. Most of them are free.

After installing Novell AMP, you can download applications from Web sites such as www.hotscripts.com/PHP (<http://hotscripts.com/PHP>), and within minutes, install them to your Novell AMP server and start benefiting from their use.

Figure 6 Novell AMP Server: You Can Download, Install, and Run Thousands of AMP-ready Applications



For more information about Novell AMP, refer to the [Novell Developer Kit](http://developer.novell.com/ndk) (<http://developer.novell.com/ndk>) Web site.

(*add additional scenarios here; work with Dean and Jim)

How NNAS Components Are Used by NetWare

Two of the NNAS components, Apache and Tomcat, are used by many of the Novell products included with NetWare 6.5. For example, Novell NetStorage depends on the administration instance of the Apache Web server for HTTP processing and on Tomcat for running its servlets.

Some of the NNAS components depend on each other. For example, the NetWare Web Search Server also depends on Apache and Tomcat.

This is why by default there are two instances of Apache and Tomcat configured to run on NetWare: one for use by Novell software (the administration instances), and another for your own use (the public instances). For more information about multiple instances of these products, see [How Apache Is Used on NetWare](#) in the *Apache Web Server Administration Guide*.

For any necessary information about making modifications to these NNAS components refer to each Novell product’s individual documentation

(*The following table is in progress--it intends to help customers understand what products depend on NNAS components, most particularly Apache and Tomcat.)

Table 1 NetWare Products That Depend On NWS Components.

NetWare Products	Apache2 Admin Server	Tomcat 4 Admin Container
iPrint	✓	
Novell iFolder®	✓	
NetStorage	✓	✓
Novell exteNd Director	✓	✓
Virtual Office	✓	✓
JVM*	✓	✓

What's Next

- ◆ For information about installing one or more NWS components, see [Chapter 2, “About Installing NWS Components,”](#) on page 21.
- ◆ For general NetWare 6.5 installation instructions, see the [NetWare 6.5 Overview and Installation Guide](#).

2

About Installing NWS Components

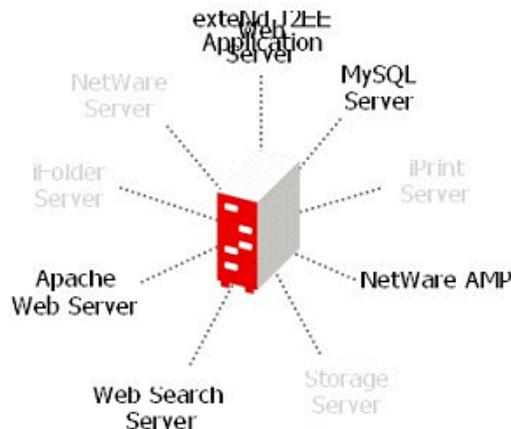
NWS components can be installed as part of a special purpose server, which installs a combination of products for a specific use, or each NWS component can be installed individually through the Customized NetWare Server install option during the NetWare® 6.5 install process. (For detailed information about installing NetWare 6.5, see the *NetWare 6.5 Overview and Installation Guide*.)

This section explains how to install one or more NWS components.

Set Up a Dedicated or Special Purpose NWS Server

NetWare 6.5 includes several special purpose server installation options, some of which include NWS components. For example, if you want to dedicate a server to hosting Web applications, you can select the exteNd™ J2EE Application Server install. Or if you want to dedicate a server for hosting Web search services, you can select the NetWare Web Search Server install. When you do, only the required components, along with the NetWare operating system, are installed.

Figure 7 Available Special Purpose NWS Servers



As shown in Figure 7, NWS special purpose servers include:

- ◆ NetWare AMP (Apache, MySQL, PHP, Perl) Server
- ◆ Apache/Tomcat Server
- ◆ NetWare Web Search Server
- ◆ exteNd J2EE Web Application Server

NetWare AMP (Apache, MySQL, PHP, Perl) Server

The NetWare AMP (Apache, MySQL, PHP, and Perl) Server lets you host Web-based database applications on your NetWare 6.5 server. Web database applications are available from the open source community. They can be downloaded from the World Wide Web and easily deployed to your NetWare AMP server. Or, if you are familiar with the structured query language (SQL) and PHP or Perl scripting languages, you can develop and host your own Web-based database applications.

NetWare AMP includes the following components:

- ◆ *Apache Web server*: The leading Web server on the Internet today.
- ◆ *MySQL*: A fast, easy-to-use, relational database management system.
- ◆ *phpMyAdmin*: A utility for managing MySQL from a Web browser.
- ◆ *PHP/Perl scripting engines*: Engines for processing PHP or Perl scripts.
- ◆ *Apache Manager*: A browser-based utility that lets you manage multiple Apache Web servers as an eDirectory™ object, regardless of the platform they are running on.

Apache/Tomcat Server

The Apache/Tomcat Server lets you deploy and host servlets and Java Server Pages (JSPs). It installs Apache Web Server 2.0 and the Jakarta-Tomcat Servlet Container 4.1 for use in hosting dynamic, application-driven Web sites.

eDirectory Java LDAP beans are also included to provide a broad range of eDirectory authentication and identity mechanisms that are customized for use in setting up browser-based access to protected information. For additional development and deployment power, install the Novell® exteNd Workbench IDE from the NetWare 6.5 Client CD.

If you need more functionality than you can get from servlets and JSPs, consider installing the special purpose exteNd J2EE Web Application Server instead.

For more information about the Apache Web Server, see the *Apache Web Server Administration Guide*. For more information about Tomcat, see the *Tomcat for NetWare Administration Guide*.

NetWare Web Search Server

The NetWare Web Search Server lets you add search and print functionality to any Web site, anywhere on the World Wide Web or on a company intranet. You can use it on your own enterprise-wide Web site or to host search services for business partners or clients.

Typically, you would dedicate a server to Web Search if you want to offload Web site traffic from your main Web server, or to provide failover for your Web Search services.

For more information about the NetWare Web Search Server, see the *NetWare Web Search Server Administration Guide*.

exteNd J2EE Web Application Server

The exteNd J2EE Web Application Server lets you deploy enterprise-class Web applications that take advantage of the full Java 2 Enterprise Edition standard: JSPs, Enterprise JavaBeans (EJBs), and all other J2EE 1.3 components and technologies. The Novell exteNd Web Application Server

provides high performance, scalability, and reliability, support for rapid application development, application deployment facilities, and server management facilities.

MySQL, Apache, and other software is installed also.

For more information about the Novell exteNd Web Application Server, see the [Novell exteNd Application Server documentation \(http://www.novell.com/documentation/lg/extendas/index.html\)](http://www.novell.com/documentation/lg/extendas/index.html).

Install Individual NWS Components

If you want to install one or more individual NWS components, you can by selecting the Customized NetWare Server option during the NetWare 6.5 installation process.

Each of the NWS components available on the Components list during install is described below.

NOTE: Some component options are available only during a post install of NetWare 6.5. These are indicated in the following sections.

NWS components available for individual installation include the following:

- ◆ [Apache2 Admin Server](#)
- ◆ [Apache2 Web Server and Tomcat 4 Servlet Container](#)
- ◆ [NetWare Web Search Server](#)
- ◆ [MySQL](#)
- ◆ [Tomcat 4 Admin Container](#)

Apache2 Admin Server

Available only during a NetWare 6.5 post install, the Apache2 Admin Server component installs an administration instance of the Apache Web server. Apache is used on NetWare in two ways: as an administration server (Apache2 Admin Server) and as a dedicated Web server (Apache2 Web Server). The Apache2 Admin Server is installed by default and runs in protected address space on your NetWare 6.5 server.

For more information, see [How Apache Is Used on NetWare](#) in the *Apache Web Server Administration Guide*.

Apache2 Web Server and Tomcat 4 Servlet Container

Selecting the Apache2 Web Server and Tomcat 4 Servlet Container component installs the Apache Web server 2.0 and the Jakarta-Tomcat Servlet Container 4.1 for your own use as a dedicated Web hosting solution. Tomcat is used for running Web servlets and JSPs.

For more information about installing Apache as your dedicated Web server, see [Installation and Configuration](#) in the *Apache Web Server Administration Guide*. For more information about installing Tomcat, see [Installation and Configuration](#) in the *Tomcat for NetWare Administration Guide*.

NetWare Web Search Server

NetWare Web Search Server lets you add search and print functionality to any Web site, anywhere on the World Wide Web or on a company intranet. You can use it on your own enterprise-wide Web site or to host search services for business partners or clients.

For more information about installing and using Web Search, see the *NetWare Web Search Server Administration Guide*.

MySQL

MySQL is an open source, SQL database. When combined with a Web application, MySQL serves as a very reliable and scalable database for use in hosting business solutions such as eCommerce and business-to-business.

If you do not have Apache installed and you want to host Web servlets or applications, consider installing either the *Apache2 Web Server and Tomcat 4 Servlet Container* component, or the special purpose *Apache/Tomcat Server*.

For more information about installing and using MySQL, see the *MySQL on NetWare Administration Guide*.

Tomcat 4 Admin Container

This selection installs Jakarta-Tomcat Servlet Container 4.1, which is used for running Web servlets and Java Server Pages. Typically, Tomcat is used with the Apache Web server.

For more information about installing and using Tomcat, see the *Tomcat for NetWare Administration Guide*.

What's Next

Once you've installed your NWAS components, refer to their individual administration guides for more detailed information.

- ◆ *Apache Web Server Administration Guide*
- ◆ *Tomcat for NetWare Administration Guide*
- ◆ Novell exteNd Product Documentation (<http://www.novell.com/documentation-index/index.jsp?category=exteNd>)
- ◆ *NetWare Web Search Server Administration Guide*
- ◆ *MySQL on NetWare Administration Guide*

If you are developing a Web solution and will be writing scripts or Java code, refer to the [Novell Developer Kit \(http://developer.novell.com/ndk\)](http://developer.novell.com/ndk).