Understanding Network
Fundamentals

Student

Manual

COMP USA

ADVANCED TECHNOLOGIES TRAINING

SM

Lesson 8
Novell Education

Introduction

CompUSA is offering training classes which prepare Novell NetWare users to test for Novell competency certifications. CompUSA's Direct Sales departments who are in daily contact with corporate America are our company's greatest advantage in selling this much *in demand* training. Knowledge of Novell Education's strategy will help us understand why these certificates and the training to acquire them are so valuable to companies.. In the next chapter we will look at how CompUSA's training works hand-in-hand with Novell's certifications. Since this preparatory instruction is competitive with training companies authorized by Novell, it is also important to understand this competition and why CompUSA's training may in many instances be better.

You will learn:

A) How and why Novell certifies the competency of NetWare users.
B) The 4 levels of Novell certification.
B) What the Novell acronyms CNA, CNE, CNI, ECNE, NAEC and NEAP mean.

Novell Education

As a solution to the sophistication and complexity of its
NetWare system software, the world's most popular
network operating system, Novell, Inc. developed
the**Novell Education** division. This division offers the
following four categories of certifications:

- Dealer (reseller, installer)
- _Professional-user_[1] (CNA, CNE, and ECNE)
- Training Facility (NAEC, NEAP)
- Instructor (CNI)

These certificates are required by Novell to represent
them on each of these levels except the _Professional-user_
level. CNA, CNE and ECNE certifications are meant to
guarantee employers and others who need to know, that
certificate holders have been tested on their knowledge
of the _operation_ of the Novell network operating system.

We are primarily interested in the Professional-user
certificates, since preparing students for the competency
exams to acquire them is our business. We will also
want to know something about Novell authorized
training facilities, since this is our main competition and
Novell authorized instructors since we use Novell
qualified instructors to train our own.

Novell NetWare _Professional-user_ Certification

Novell determined that competently trained technicians
and administrators, besides creating NetWare
advocates, would deflect unwarranted criticism of their
software away from the company. Now Novell
certification has taken on a life of its own, guaranteeing
certificate holders higher wages and better jobs.

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[1]The term _**professional-users**_ is defined to mean those
people who design, build, install and administrate
Novell NetWare, as opposed to _end-users_ who are
individuals working on applications on a network to
whom NetWare is most often invisible.

Novell Professional-user certification is tested by Drake Technologies, in association with Novell, Inc. around the world. Class attendance is *not* required to test for these certificates but for most people instruction is necessary to learn the intricacies of network hardware and software. CompUSA's training is specifically designed to help students pass these competency tests.

Applicants can call 800 RED-EXAM to find and register for examination at the nearest Drake testing center. Exams are closed book and electronically broadcast via modem within 24 hours of application. Students are given an appointment and must come to the Drake center for each test. Each exam costs $85.00 regardless of the outcome.

Professional-user certifications are organized similar to college credits. Exams are worth a certain number of credits towards the granting of a certificate. Due to upgrades and version changes, some certifications may require continuing education and re-testing. Novell contacts certificate holders when this is necessary.

Certified NetWare Administrator (CNA)

The CNA is Novell's entry-level certification. This certification prepares an individual to administrate the day to day running of a Novell network. Tasks may include, authorizing new users, assigning security rights to users, writing login scripts, backing up the system, installing network applications and managing the printing equipment.

To receive a CNA certificate, candidates must pass one competency exam which covers the basics of System Administration. 3 credits are required and the exam is worth 3 credits.

Certified NetWare Engineer (CNE)

The CNE certificate is a very large step up from the CNA. CNE's are often consultants, system integrators or employees of companies requiring full expertise of the NetWare environment for both hardware and software.

While they must have CNA knowledge they must also be adept at designing, troubleshooting, repairing, and upgrading the network at both workstations and servers. Often their tasks involve fine tuning a network

to run at its maximum efficiency. They are depended upon to install and keep a network up and running.

Along with CNA knowledge (understanding System Administration), the prospective CNE must demonstrate a solid understanding of micro-computers and DOS., troubleshooting and network theory.

Seven competency exams for a total of 19 credits, in 3 categories, must be passed for this certification. These are:

- Core exams (10 credits)
    - DOS/micro-computer concepts
    - NetWare service and support
    - Networking technologies
- Operating systems (7 credits)
    - System Administration (*Same as CNA*)
    - Advanced System Administration
- CNE Electives (2 credits)
    - Various topics chosen from a menu

Enterprise Certified NetWare Engineer (ECNE)

The ECNE is a further definition of the CNE program. This technician must choose and become expert in a network specialty area. Much more exotic jobs such as attaching differing kinds of hardware and operating systems together to produce Wide Area Networks (WAN's) or dial-in, dial-out capability for the network can be handled by this certificate holder.

Certification for ECNE requires choosing from the same menu of electives an additional 17 credits worth of exams to pass. Usually, these are combined to create a specialty for which the ECNE will be especially proficient such as communications, connectivity or a broad knowledge of all Novell software releases.

Novell's Educational Sites - The NAEC, NEAP and the CNI

As a company, Novell is primarily a software manufacturer, not a training company. To maintain the integrity Novell feels is imperative in training for these competency exams, an authorization program exists for those who offer preparatory certification training.

Novell Authorized Education Centers (NAEC)

Novell has attempted to standardize their training by requiring private companies who wish to train Professional-users to meet certain standards. Also, NAEC's must pay a large fee for this authorization and an annual fee to renew their application. NAEC's are required to use *only*:

- Novell's own written courseware
- Novell Authorized Instructors (CNI's)

The kind of companies which can apply for this authorization are:

- Resellers
- Distributors
- Original Equipment Manufacturers
- Independent Training Companies
- Consultant Organizations

Novell Education Academic Partner (NAEP's)

Accredited educational institutions such as Universities, Colleges and Trade Schools can become authorized as Novell training centers by adhering to the guidelines above. Most of their programs are integrated into the school year and have either semester or quarterly course length. This makes them much less competitive to CompUSA's training plan.

Certified Novell Instructors (CNI's)

To assure the level of training meets Novell's standards, Novell has developed a program to train Instructors. These instructors must qualify as CNI's to staff the NAEC's and NAEP's. A Novell instructor must pass the same exams as the usual professional-user but must pass at 90% accuracy (as opposed to 80%) to apply for CNI status. The candidate must be sponsored by an NAEC or NEAP. After attending Instructor Performance Evaluation (IPE) reviews for the courses which they wish to instruct in, the candidate receives the CNI certificate for that course.

Analyzing Novell's educational strategy

The Positive

Novell's Educational program has helped Novell successfully weather the criticisms which most network manufacturers faced in the dawn of networking. By requiring this competency, buyers now feel confidence in Novell NetWare and the acronyms CNA, CNE and CNI have become dependable benchmarks of professional competency in the technical world.

The Negative

Novell, itself, is not entirely comfortable with its role as an educational entity. Novell Education has been a means to an end for the company and was never meant to be an end in itself. Some things have gotten out of balance.

The CNI requirement of the NAEC and NEAP certification programs present a bottleneck to Novell authorized centers. No longer limited to salaried staff positions, most CNI's have become Independents, doubling as both consultants and instructors. They are able to dictate high rates to the authorized training entities who must employ them. These instructor rates, along with the fees that Novell demands for authorization force these training facilities to charge relatively high prices for their services.

Novell does not own the training centers that it authorizes and can de-certify a center for not meeting certain standards. However, it is a difficult to actually police 900 authorized centers. There is not necessarily 100% compliance with Novell standards in these centers at all times.

Also, since these training centers come from a number of business disciplines and their CNI's from several different technical fields, there is not a standardized *training* expertise or consistency from center to center.

Finally, Novell's courseware is often criticized as written by a company which writes computer manuals better then training materials for students new to networking.

Lesson 9
CompUSA NetWare Training

Introduction

Recent experience with a third party NetWare training vendor has shown CompUSA that there is a market for Novell NetWare training. These high ticket course offerings put CompUSA in an entirely new training arena - technical training. To find solutions for customers needs in the networking market, specific expertise, knowledge and equipment is required. This chapter explains CompUSA's Authorization program and how it dovetails with Novell's own *professional-user* certifications described in the previous chapter.

By the end of this chapter, it should be clear why CompUSA's training program is not only the equal of the NAEC's but often superior to what the NAEC's can offer. *This is your competitive edge!*

You will learn:

A) How and why CompUSA has chosen its market.
B) What CompUSA's CANI, CANC and CANSA acronyms mean.
C) Why CompUSA's training program has a competitive edge over other training programs including Novell's NAEC and NEAP programs.

CompUSA Resources and Market Position

CompUSA Direct Sales

As the largest computer retailer in the world, CompUSA is in a unique position in selling NetWare training. Every business day CompUSA's direct sales staff makes about 12,000 phone calls a day to corporate America to sell them multiple computers and the hardware and software to support them. This is the specific target audience for NetWare training. This is CompUSA's greatest competitive advantage.

CompUSA Instructor Pool

In the past few years, CompUSA has made a significant commitment to application and computer instruction. Six days a week and many evenings, in 250 plus training classrooms, CompUSA Instructors train more than 1,000 people in computer applications and systems. We have developed a broad base of instructor talent to draw upon. By training our own elite instructors we avoid the CNI bottleneck and provide a career path for them.

CompUSA Training Centers

In our current retail locations and at the planned stand-alone training sites, CompUSA has developed the nation's largest network of wholly owned training centers. These centers are already successfully offering application training. There is a tested team of training administration and sales professionals at each location. And, because we are CompUSA, the largest computer superstore, the perception already exists that we will have the best equipment in our classrooms.

Considering these resources, it becomes obvious that CompUSA training competes primarily with the NAEC's for corporate business and therefore, multiple sales. The non-affiliated centers must sell NetWare training based on price alone. Their appeal is to individuals attempting to improve their employability.

CompUSA's market position focuses on companies, already aware of how critical the data and communication on their network is to them. These customers understand that the quality of training and the protection of their data is more important than price. We must offer the highest quality NetWare training possible and then use CompUSA's own unique resources to deliver more for our customer than the Novell Authorized centers can - and for less.

CompUSA's Authorization Program, the CANI, CANC and CANSA

To assure quality and but avoid the bottleneck Novell authorization could create, CompUSA NetWare Training has developed a series of three Authorizations which dovetail with Novell's Professional-user certificates.

1) CANI, *the CompUSA Authorized NetWare Instructor* is a highly motivated CompUSA instructor who has been specifically trained in adult technical education specializing in Novell's NetWare.
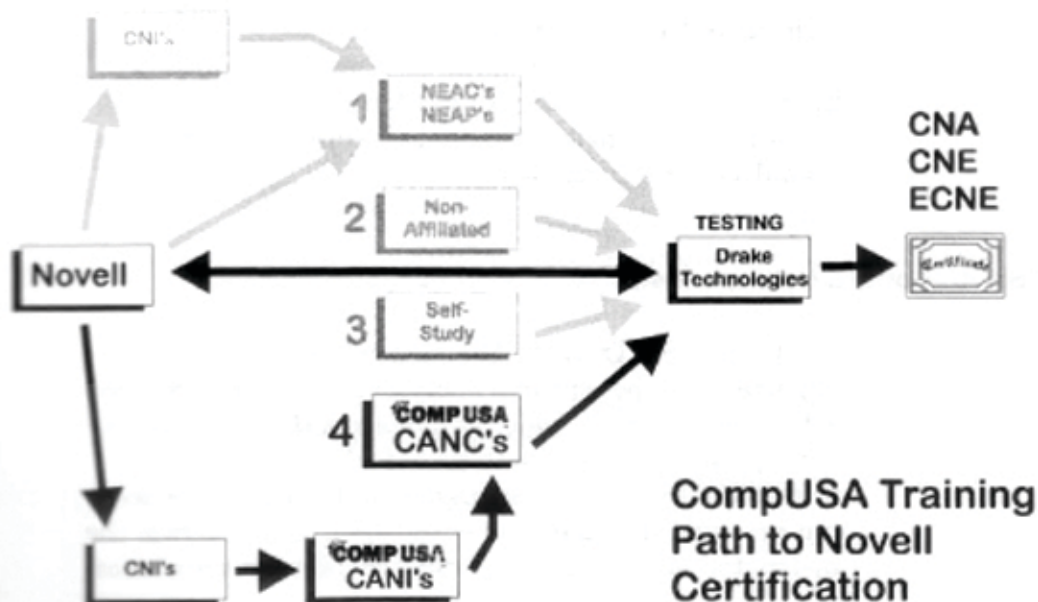
2) CANC, *the CompUSA Authorized NetWare Center* is a CompUSA training center which has passed a stringent examination of its equipment, training environment and staff and has been judged able to deliver the technical training and service required.

3) CANSA, *the CompUSA Authorized NetWare Sales Agent* is a member of the CompUSA sales team who has taken the training you are now taking and, as a knowledgeable representative, can offer complete solutions to CompUSA network customers including training, hardware and software.

CompUSA's role in NetWare Certification

As the graphic below shows, there are 4 ways to achieve Novell user certifications.

CompUSA Training Path to Novell Certification

The Four Paths to NetWare professional-user certification

1. Attending a Novell Authorized NAEC or NEAP
2. Attending a non-affiliated training facility such as Wave Technologies
3. Self-study
4. CompUSA's Training Centers (CANC)

NAEC, NEAP

These Novell Authorized centers are expensive and take a slanted view of networks. As Novell is software manufacturer and to some degree a hardware developer, the company takes a dim view of discussing anything other than Novell hardware or software solutions in its training materials.

Non-affiliated training centers

These centers are often poorly equipped or worse, poorly staffed. The quality of the training can be questionable. Since price is more important than the quality of instruction these facilities appeal more to individuals trying to better their own employment opportunities rather than companies with data to protect.

Self-study

While Novell certification does not depend upon attending a class most people do not have unrestricted network access, time or inclination to devote to self-study. Instructor led courses are far more popular to prospective trainees.

CompUSA NetWare Training

As the graphic shows, CompUSA's program contracts the same CNI's that the Novell Authorized centers use to train its own instructors, usually elite trainers from CompUSA's own Instructor pool.

CompUSA Authorized NetWare Instructor (CANI) - Level I

The CompUSA Training Division believes the most important component in a successful training program is the instructor. A major emphasis of this program is to prepare instructors both technically and professionally to offer the highest quality training we can arrange. To qualify to enter the CANI program the Instructor-candidates must meet certain pre-requisites:

- A Novell Certification for each course they wish to teach.
- Sponsorship by a CompUSA Training Center.
- Six months training experience in a CompUSA or equivalent training environment.
- Passing a pre-qualifying examination similar to but slightly more demanding than the Novell exam.
- A submitted application form with resume and agreement guaranteeing Instructor will be available for CompUSA assignments for 1 year.

Currently, candidates are chosen on the basis of geographic need, test scores, manager recommendations and previous network experience. Instructor-candidates who are chosen then attend a CANI Level 1 training course. Here they must:

- Learn the techniques of *instructor-led* adult and technical training.
- Prepare and deliver video-taped presentations for class presentation evaluation by the CNI and the other instructor-candidates.
- Pass 100% evaluation by CNI instructor.

These graduates are prepared to instruct in the *instructor-led* courses, specifically the ones which lead to Novell CNA certification. CANI Level 1 is a special course created by a highly trained consultant in conjunction with our courseware vendor, Logical Operations emphasizing CompUSA's particular requirements.

CANI - Level II

To prepare CANI Level I instructors for the more advanced courses, CompUSA NetWare Training is working to provide hands-on NetWare installation and administration by these instructors. To apply for the Level II training, CANI Level I trainers must:

- Hold a valid CANI Authorization.
- Have 100 hours minimum of hands-on work with Novell NetWare operating systems.
- Hold Novell competency certificates for the courses which they will teach.
- Maintain a customer evaluation average of 90% or better for the CANI Level 1 courses they teach..

CANI Level II training will feature instruction on how to instruct in the Novell NetWare _lab_ environment and _lecture_ courses, much different disciplines than the usual _instructor-led_ courses.

Courseware

The second most important element in successful training is courseware. Novell has often been criticized for its courseware. Very few software manufacturers have been able to write successful training materials for their products. CompUSA training, on the other hand, has always relied on professional course writers who prepare courseware as their main business.

After examining all available courseware for these specialized classes, CompUSA has found in Logical Operations a courseware vendor who has developed what we feel are the most logically organized and accurate course books. LO is owned by Ziff publishing, runs its own huge training center in Rochester, NY and offers NAEC training just to stay in tune with Novell. The materials they provide come with trainer guides which help the instructors setup the equipment and training environment, lead them through the chapters and provide classroom tools.

CompUSA Authorized NetWare Center (CANC)

The next critical element in training is the atmosphere including the equipment, ambiance and professionalism of the supporting staff.

CompUSA training centers do not automatically qualify as NetWare training sites. First, they must request to offer NetWare training. Then they must be evaluated for the following CANC levels. When it is impossible to evaluate a training center prior to class availability, provisional status can be given until an on-site inspection is made. All CompUSA training locations must use CANI instructors for NetWare training and the designated courseware.

CANC Level I sites can offer the NetWare basic courses by passing a checklist which lists equipment, staff and environment requirements. Most CompUSA training centers currently meet these requirements.

CANC Level II sites must have an extensive list of hardware and software available and installed to create the lab environments necessary for the advanced training. They must meet the staffing and environment requirements as well. These checklists must be passed annually.

CompUSA Authorized Sales Agent (CANSA)

A most important part of CompUSA's professionalism comes from the sales people representing this advanced training. CompUSA sales staff wishing to present CompUSA's NetWare training program to their customers must first attend the *customized* **Understanding Network Fundamentals** class of which this chapter is a part. The CANSA authorization resulting from this training assures CompUSA of a knowledgeable sales person who can provide real solutions for their customers and represent CompUSA training responsibly.

CompUSA's Marketing Advantage - A Summary

> **We're not "JUST AS GOOD" as a Novell authorized training center - we're BETTER!**

- CompUSA training is the largest wholly owned training company in the country. We can offer the highest quality NetWare training with national consistency in the most locations.
- Because we're CompUSA, America's computer superstore, we have consistently better equipment and better classrooms.
- We pre-qualify and train our own CANI's, using Novell trained instructors. This gives us consistent and experienced instruction, country-wide.
- We qualify our training centers to the highest possible standard of equipment, staff and environment to authorize them as CANC's, CompUSA Authorized NetWare Centers.
- We use the best NetWare courseware written.

A Comparison of Course names

LOGICAL OPERATIONS - COMPUSA	NOVELL, INC.	WAVE TECHNOLOGIES
System Administration for NetWare 3.12	NetWare 3.1x Administration	Admin for NetWare 3.x
System Administratino for NetWare 4.0	NetWare 4.0 Administration	Admin for NetWare 4.0
CNE Core Classes	**CNE Core Classes**	**CNE Core Classes**
System Admin for NetWare 4.0x	NetWare 3.1x Advanced Administration	Admin for NetWare 4.0
Advanced Admin for NetWare 3.x	NetWare 4.0 Administratino	Advanced Admin for NetWare 3.x
Advanced Admin for NetWare 4.0x	NetWare 4.0 Advanced Administration	Advanced Admin for NetWare 4.0
Prinicples of Internetworking	Networking Technologies	Data Communication Technologies
Troubleshooting & Support for NetWare	NetWare Service & Support	Technical Support for NetWare
The Basics	**The Basics**	**The Basics**
Advanced Topics in DOS 6.0/6.2	Microcomputer concepts	PC Support Specialist
Understanding Network Fundamentals	Fundamentals for NetWare Users	Local Area Network Technologies
User Orientation for NetWare 3.12	N/A	N/A
User Orientation for NetWare 4.0	N/A	N/A
Electives	**Electives**	**Electives**
NetWare TCP/IP Transport	NetWare TCP/IP Transport	Internetworking with TCP/IP
NetWare Install & Config for NetWare 3.12	NetWare 3.x Installation & Configuration	Installation and Configuratin of NetWare 3.x
NetWare Install & Config for NetWare 4.0	NetWare 4.0 Installation & Configuration	Installation and Configuratin of NetWare 4.0
NetWare 4.0 Directory Service & Design	NetWare 4.0 Directory Service Design	N/A
NetWare Upgrade 3.x to 4.0x	NetWare 3.1x to 4.0x Update	Update from NetWare 3.x to 4.x
NetWare NFS	NetWare NFS Gateway	N/A