

New Network+ Certification Standards N10-005

A recent inquiry about the newest CompTIA Network+ certification standards has prompted early publication of the standards. Precisely, the inquirer wanted to know if Networking Fundamentals, 2nd Edition will cover the entire certification test objectives. As you can imagine, keeping a textbook and lab manual up-to-date is a constant struggle, especially in a rapidly changing field of technology. But, rest assured we cover 95%+ of the newest set of objectives. In fact, I typically anticipate what next objectives will be in future tests, and include them in the current textbook and lab manual. When I miss an objective, I will always add the new material to the RMRoberts.com website for you to use in your classroom. I know many of you must use the same textbook for five years, or more, according to your individual state or district textbook adoption policy. We will never let you down. Always check the RMRoberts.com website for updates or better yet, subscribe to our newsletter. When you subscribe to the newsletter you will always receive a copy of the latest changes before they are posted on the website. Subscription to the newsletter is providing as a **free** service to support you in the classroom and **you will never** see any commercial advertisements on the site.

The newest versions of the **CompTIA Network+ Certification** standards have been released and will go into effect late 2012. After hours of comparison between the old test and the new test standards, it has become evident that there are **no major** changes when comparing the detailed test objectives of **Network+ N10-005** released December 1, 2011 with the previous version N10-004. Effective September 2012 (their target), there will now be five major test areas for N10-005 as compared to the last version of the certification test (N10-004) which is (until August 2012) comprised of six major domain areas. See the comparison chart below.

CompTIA Network+ Test Domain Comparison

New N10-005 Test Domains (released) December 1, 2011 (Effective August 2012)	N10-004 Test Domains until August 2012
Domain 1 Network Concepts	Domain 1 Network Technologies
Domain 2 Network Installation and Configuration	Domain 2 Network Media and Topologies
Domain 3 Network Media and Topologies	Domain 3 Network Devices
Domain 4 Network Management	Domain 4 Network Management
Domain 5 Network Security	Domain 5 Network Tools
	Domain 6 Network Security

The changes are superficial at best. For example, the N10-004 Test Domain 3 - Network Devices and Domain 5 - Network Tools do not appear in the domain listing for

the N10-005. At first glance, it appears that there has been a major change of topics, however, after studying the detailed objective listings contain in each domain, you will see that network devices and network tools have not actually been dropped from the CompTIA Network+ Certification, but rather these concepts have been consolidated into the detailed objectives of the newest version of the test objectives.

The additional objectives added as to the Network+ Certification is as follows.

Objective 1.7 DNS record types (A, MX, AAAA, CNAME, PTR) have been added to the objectives. In short, this is the latest set of classifications for DNS records, and it is seldom used or applied by a network technician. Check the following CISCO link for more information.

http://www.cisco.com/en/US/products/sw/netmgts/ps1982/products_user_guide_chapter09186a00800ade55.html

Objective 1.8 rewording of the troubleshooting methodology. The method has not changed they are simply using different wording to describe the process.

Objective 1.9 Identify virtual network components. This has been expanded, however if you already teach “virtual” devices concepts, consider this objective covered. Our current textbook covers virtual servers, which integrates the concept of “virtual” devices.

This is also a vague reference to **cloud computing**, because it is also viewed as a virtual network system. We will be introducing a detailed article about “cloud computing” in the near future. CompTIA is presently preparing to include a separate “cloud computing” certification. See the following link for more information about the CompTIA cloud certification.

<http://certification.comptia.org/getCertified/certifications/cloud.aspx>

Objective 2.1 VTP configurations is a CISCO concept for configuring VLANs. This is presently covered by the current textbook.

Objective 2.5 Mismatched MTU/MUT black hole. This is an old concept which rarely occurs today. The source is most likely a CISCO instructor on the test objective panel. To learn more about what it is at a practical level, check the following link at Microsoft. To learn more about the concept of mismatched MTU/MUT use the following two links.

The first is at Microsoft <http://support.microsoft.com/kb/314825>

The second is at the following Cisco website.

http://www.cisco.com/en/US/docs/ios/12_2/ip/configuration/guide/1cfeigrp.html

Objective 2.5 Bad modules (SFPs, GBICs). These are plug-in modules for CISCO routers. Again, this is CISCO proprietary information covered at the following link: http://www.cisco.com/en/US/docs/routers/7200/install_and_upgrade/gbic_sfp_modules_install/5067g.html#wp90313

Objective 3.1 T1 crossover cable. The T1 crossover cable is used by CISCO to connect two(2) - T1 CSU/DSU devices back-to-back, or a PBX to another PBX. This type of cable is seldom encountered and most products use a simple rollover cable to achieve the same purpose. See the following link for information: http://www.cisco.com/en/US/products/hw/routers/ps233/products_tech_note09186a00800a3f09.shtml

To see another article on how to make the T1 crossover cable view the following link: <http://www.voip-info.org/wiki/view/crossover+T1+cable>

Objective 3.4 LTE Long Term Evolution is a wireless communication (telephone) standard also referenced by CISCO as a router technology. Check the following link to learn more: <http://cp.literature.agilent.com/litweb/pdf/5990-6706EN.pdf>

Objective 3.4 HSPA+ again a wireless communication technology. Both LTE and HSPA are used to support 3G wireless device communications, such as tablets and cell phones. Check the following link to learn more about HSPA, LTE and other wireless standards: <http://www.3gpp.org/HSPA>

Objective 3.4 PON (Passive Optical Network) is a point-to-point optical connection made by either fiber optic cable. The term “passive” means there is no real intelligence, simple cable. This is also covered by the textbook, but the acronym PON is not used. Check the how stuff works website to learn more: <http://communication.howstuffworks.com/fiber-optic-communications/fiber-to-the-home2.htm>

Objective 3.4 SDH (Signal Digital Hierarchy) is a signaling multiplexer protocol similar to SONET. Checkout the CISCO link: http://www.cisco.com/en/US/tech/tk482/tk876/technologies_tech_note09186a008011927d.shtml

Objective 4.6 CARP (Common Address Redundancy Protocol) or CARP is a protocol designed to enhance network redundancy by providing network devices to share the same local IP address. It is a free, open source version of CISCO's HSRP (Hot Standby Router Protocol). This is similar in nature to the way a Failover Cluster is used to provide consistent server access. A group of individual servers connected, both physically and logically, to ensure constant service to clients. Two links have been provided so that you may learn more details about the CARP protocol.

<http://www.openbsd.org/faq/pf/carp.html>

<http://www.techopedia.com/definition/25696/common-address-redundancy-protocol-carp>

Objective 5.2 Remote access ICA. The remote access ICA is a proprietary thin client protocol referred to as Independent Computer Architecture. It is part of the XenApp application utilized by Citrix Systems.

Objective 5.3 Evil twin. Evil twin is a term used for a rogue wireless access point. Check the following Cisco link:

http://www.cisco.com/en/US/prod/collateral/wireless/ps9733/ps9817/data_sheet_c78-501388.pdf

Objective 5.6 The addition of NESSUS and NMAP security scanners. Both can be obtained for free as a download. They are software applications used to test network vulnerabilities. NESSUS originally was open source, but is now has a proprietary version.

A NESSUS link is provided as follows.

<http://www.tenable.com/products/nessus/nessus-product-overview>

A NMAP link is provided as follows: <http://nmap.org/>

Note: *There are several test objectives in Domain 2 that cover CISCO switches and routers. They are proprietary in nature, which is a curiosity because CompTIA is supposed to be vendor neutral.*

Additions to the CompTIA Acronym List

Interestingly several of the newest acronyms introduced in the test objective standards do not appear in the test objective acronym list for example the following acronyms are missing from the acronym list:

PON

HSPA+

SDH

I am sure after circulating our newsletter from RMRoberts.com that CompTIA will add the missing acronyms to their list.

Networking Fundamentals (*as a subject matter for employment competency*) far exceeds the current and upcoming CompTIA Networking Fundamentals exam objectives.

The current Networking Fundamentals, 2nd Edition, by Richard Roberts, not only meets the CompTIA standards, but also is expanded to include a comprehensive introductory level of job entry level networking technician skills required to perform the job.

For example we have included an introductory chapters and lab activities covering:

- 1) server basics,
- 2) the Microsoft and Linux operating systems,
- 3) user accounts and file sharing permissions,
- 4) an in-depth coverage of IPv6,
- 5) all major proprietary network protocols,
- 6) Wireshark protocol analyzer,
- 7) as well as many more areas required for job entry level technicians.

CompTIA has continued to limit certification to non-proprietary systems with the exception to CISCO systems. I believe this is just the newest *exam-bias* which has been caused by the inclusion (and influence) of too many CISCO instructors serving on the CompTIA certification boards, which create the test objectives. This influence results in many terms, acronyms and technologies limited to CISCO (vendor) routers and switches.

CompTIA has always advertised that its test objectives are “vendor neutral,” but in reality they are not. They very much parallel the “packaged” CISCO networking curriculum in an effort to insure that CISCO students can pass the CompTIA Network+ certification test.

Students who have completed the “packaged” CISCO program have historically had Difficulty passing the CompTIA Network+ Certification test because the test was generic and included too many basic skills needed by the job technician. Historically, the CompTIA test included objectives which covered basic, **but crucial technical skills** dealing with:

- a) Microsoft and Linux sharing,
- b) network interoperability between Linux/UNIX based systems and Microsoft systems,
- c) User account basics of Linux/UNIX and Microsoft systems,
- d) and more.

The newest influence is quite evident when you continually see the omission of the common trouble shooting tool “Pingpath.” This is a major omission affecting the certification standards. *(It appears to me that this is more than a coincidence because the CISCO curriculum does not include the “Pingpath” command.)*

CompTIA Three Year Certificate Cycle

CompTIA is making a major revision in its Certification process. It is now only offering a three year limited re-certification cycle for A+, Network+, and Security+. CompTIA will now be requiring re-testing as a method to be in compliance with the DOD 8570.1 directive requiring updates to certification on a continuous basis for all persons (full and part time) who have privilege access to DOD network systems.

The DOD requirement is for all military personnel as well as subcontractors, civilian employees (both domestic and foreign). This is a large pool of employees and provides a large target population for the certification test. CompTIA also now offers its own curriculum for Continuing Education Units CEU through a link on the CompTIA website. This is also used to meet the DOD requirement and the CompTIA certification standard. CompTIA is listed as a not for profit, but recent events, activities and offerings indicate to me that they are now in the business to make money.

CompTIA is now forced to revise their certification exams on a continuous basis even if they have not introduced major changes in the technologies. Looking at the newest version of test objectives made this quite obvious.

In reality, there has not been much of a change. Approximately 95 % of the objectives are the same. Most of the changes are actually quite superficial.

I believe that CompTIA will, eventually, be forced to include basic technician concepts that are missing such as:

- 1) adding other important proprietary protocols and concepts to the network+ test objectives,
- 2) they should also include some basic proprietary information for Microsoft networks and Linux based networks.
- 3) Questions for the certification that should be included as follows: Who is root?
- 4) What are share properties/permissions?
- 5) What are the properties associated with a user account?

The test candidate should be tested on essential network basics. I would much prefer to have a novice network technician tested on their comprehension of accounts, permissions, and sharing for both Microsoft server networks and UNIX/Linux network systems, **rather** than the OSI model layer definitions. After all, how many calls are made to tech support concerning the OSI model layers.