Computer Service Technicians

Occupational Brief Title Codes:
- D.O.T.: 828.261-014
- G.O.E.: 05.05.05
- S.O.C.: 49-2094
- O*NET™: 49-2094.00
- N.A.I.C.S.: 811212
- H.O.C.: RIE

Work Classification Based Related
D.O.T. Occupations:
- Electronics Mechanics
- Field Service Engineers
- Missile Repairers
- Precision Assemblers

Interests Based Related
G.O.E. Occupations:
- Audio-Video Repairers
- Avionics Technicians
- Electrical Instrument Repairers

Skills Based Related
O*NET Occupations:
- Computer Support Specialists
- Electronics Engineering Technicians
- Network Systems and Data Communications Analysts

Noteworthy Quote:
“A computer service technician is often welcomed by individuals in stress because their equipment no longer works. They expect an organized, trustworthy, ethical, and rational individual, who can quickly, without panicking, find the problem and resolve it. If the problem is going to take considerable time and equipment orders from distant locations, communicate those issues accurately to the people requesting the servicing. In many instances preventative maintenance programs need to be initiated and the data and systems maintained in a reliable manner. It is both a challenging and high stress job, but with great rewards when satisfied customers communicate their gratitude for your timely skills.”
–Kewal Dhariwal, CCP, Executive Director, Institute for Certification of Computing Professionals, Des Plaines, Illinois

Computer Service Technicians (com’put-er ‘ser-vice tech’ni-cians) install, maintain, modify, and repair computers and related equipment such as printers, disk drives, and networking equipment.

Computers are vital to almost every business in the United States. Computers keep data on credit card charges and payments, car licenses, magazine subscribers, birth certificates, hospital patient records, and school test scores. Computers sort, store, and give back facts in words, numbers, and symbols. They help reporters write news, and they run the presses that print the newspaper.

Police use computers to find suspects; doctors, to detect a disease; and engineers, to design a space module. With telephone lines, satellites, and terminals, computer designers and engineers have built a worldwide communications network.

Business, industry, government, educational, and health care systems rely on computer service technicians to keep their computer systems in order. These experts install, service, maintain, and repair the units or systems.

Computer service technicians, and others who use the equipment, call the machinery hardware. Software is the set of instructions that tell the computer how to process data. Peripheral equipment—magnetic tape drives, disk drives, terminals or screens, printers, and even small computers that large ones use—are linked to the computers.

Work Performed
When a customer purchases or leases a computer system, computer service technicians assist in the installation. They may take part in the site planning to help ensure that the customer will get the best performance from the system. They uncrate new computer hardware and inventory the items. They place the major components into service according to the engineering drawings or specifications. They may make special cable and wiring connections, working closely with electricians who install the wiring for the new system.

Printed in United States of America, February 2008
Visit our Web Site www.ChronicleGuidance.com
To check the operation of the new equipment, technicians run special programs that test memory components, terminals, printers, and other input and output devices. If problems arise, they can call the manufacturer for solutions. Computer service technicians may conduct training sessions to show employees how to use the new equipment.

Most users of computer equipment have a service contract with the manufacturer or service company. Technicians service the computers the manufacturers sell or lease to customers. In preventive maintenance, computer service technicians do regularly scheduled checkups of the computers and peripheral equipment to keep them trouble-free. They inspect the components and adjust, clean, lubricate, and test the parts.

When a computer system breaks down, the user calls in computer service technicians. They talk to the customer and inspect the equipment to look for the cause of the trouble. They may run diagnostic programs or use testing equipment to find the site of specific problems. Many computers have a self-diagnosing capacity that directs the technicians to the source of the problem. Sometimes the malfunction is in the system or in other parts of the hardware. At other times, the software is the cause of the trouble.

If it is a hardware problem, technicians repair it. Technicians may replace semiconductor chips, circuit boards, or other components. They may also repair mechanical parts of the computer. They may send defective or broken parts to the manufacturer for repair, salvage, or scrap. If the software is faulty, technicians call the software company.

Some expert technicians work in a central office. When a technician in the field cannot get a computer working, these specialists set up a model like the broken one and analyze the mock-up to find the trouble. They tell the technicians working on the real one how to fix it.

Technicians keep records of maintenance and repairs. They keep time and expense reports, order parts, and keep a parts inventory. Experienced technicians also help teach new workers the job. Computer service technicians often work in teams of two or three.

**Working Conditions**

Most computer service technicians work in a clean environment. Computers are usually installed in air-conditioned, well-lighted offices or departments. When installing equipment, technicians may uncrate and lift delicate parts and units. They may also work around high voltage and must take precautions accordingly.

This work often causes mental fatigue. Downtime is costly, and customers under pressure from top management require tactful handling.

Technicians with special skills may travel hundreds of miles to work on difficult repair jobs. Those who work for a large national firm may travel hundreds of miles and stay for several days in another city while installing or modifying equipment for a company or a university, for instance. Other computer service technicians may be on staff full time in even small business establishments to ensure that computer functioning is maintained at all times.

**Hours and Earnings**

Computer service technicians work about 40 hours a week. They often work overtime and on weekends to make repairs. They may be on call twenty-four hours a day to answer calls from customers who run their computers around the clock or for international clients.

According to the Bureau of Labor Statistics, computer service technicians earned an average of $45,670 a year in 2006. Earnings ranged from a high of more than $64,270 a year to a low of less than $27,940 a year. The earnings of technicians vary widely depending on geographic location, employer, and years of experience. Employees of large manufacturers earn more than those working for small firms. Computer service technicians in supervisory positions earn more than those who handle only service and repair.

Computer service technicians may receive benefits including life and health insurance, paid holiday, vacation, and sick leave, and retirement plans. Employers also pay for work-related travel and education. Many computer service technicians have the use of a company car or van.

**Education and Training**

High school courses in mathematics, physics, electronics, and computer science are good background. Shop courses or hobbies that deal with electronics will prove helpful.

Most employers prefer job candidates with an associate or bachelor degree, or a certificate for formal studies completed in a college, university, or technical school. A typical curriculum for the first year of a two-year associate degree program might cover courses in computer programming, electrical and electronic circuits, algebra and trigonometry, physics of mechanics, physics of heat and light, written and spoken communications, and economic and cultural patterns. The second year might include courses in computer operating systems, microcomputers, computer languages, calculus, physics of electricity, process control systems, communications, and technical report writing.

Students who plan to go on to earn a four-year degree should be sure to take subjects that will transfer to a four-year program of study. Many companies are now recruiting students from colleges and universities who have a bachelor’s degree in engineering technology.

New technician trainees spend three to six months in company classes. They study computer theory, the theory of circuits, and electronics. After this basic schooling,
technicians go through on-the-job training that lasts from six months to two years. Working with skilled technicians, they work on the specific equipment manufactured by their employers. They start with simple tasks and move on to complex computers. Due to the connectivity of today’s computers, a computer service technician should have a fundamental knowledge of networking, network systems, the Internet, storage systems, security, and back-up devices.

Throughout their careers, technicians must keep up with the ever-advancing science of computers. Employers give workshops and classes to teach technicians how to repair and service new products and devices. Technical bulletins and newsletters also help keep technicians up-to-date. Computer franchises sponsor workshops, classes, and seminars.

**Licensing, Certification, Unions and Professional Societies**

Several organizations focus on the interests of computer professionals. Foremost among them is the Institute of Electrical and Electronics Engineers (IEEE) Computer Society with nearly 90,000 members. The IEEE Computer Society provides conferences, publications, networking opportunities, and career resources. The Association for Computing Machinery (ACM) and the Association for Information Systems (AIS) offer members educational activities, publications, meetings, awards, and online books and courses. The IEEE Computer Society, the ACM, and the AIS are all member societies of the Computing Accreditation Commission (CAC) of the Accreditation Board for Engineering Technology (ABET).

The Institute for Certification of Computing Professionals (ICCP) examines and certifies professionals in the computer information processing industry. It operates internationally recognized certification programs leading to the designations Certified Computing Professional (CCP), and Associate Computer Professional (ACP).

The Computing Technology Industry Association (CompTIA) offers several certifications. Many computer service technicians choose to earn the CompTIA A+ certification. The Electronics Technicians Association, International (ETA) also offers various certifications and educational resources.

**Personal Qualifications**

Computer service technicians must be able to work independently, without direct supervision. They should be analytical and logical thinkers able to track problems and arrive at solutions. They should be patient, systematic, and persevering in their work methods.

Technicians should have interpersonal skills to deal well with customers and co-workers. They should have a pleasant disposition, and be able to pass along ideas and facts with ease.

To work for some firms, applicants may be required to pass a physical examination. For others, they may need security clearance from the government because the work is on computers that deal with restricted data.

Occupations can be adapted for workers with disabilities. Persons should contact their school or employment counselors, their state office of vocational rehabilitation, or their state department of labor to explore fully their individual needs and requirements as well as the requirements of the occupation.

**Where Employed**

Computer service technicians are needed in nearly every work environment that exists today. In many segments of the work world they have become crucial components of a company’s success. As computer technology and usage increases in our day-to-day living and working, these technicians and the role they play have become essential in all segments of business, educational, and military occupational fields.

Most of these technicians work for computer manufacturers. Others work for firms that offer maintenance service. These technicians travel daily, perhaps to two or more places each day. Some work for large corporations with complex computer networks that require full-time technicians. Others work for retail computer stores.

Whether they work for a company that makes computers, for a business firm, or for the government, most technicians work in or around big cities. Computer systems and units are in use everywhere, however. Many technicians now work in the suburbs and surrounding areas.

**Employment Outlook**

Vast numbers of computers in service require thousands of skilled technicians to keep them operating. Private industry, government, service industries, and other organizations will acquire more equipment for use in an ever-broadening range of applications. Organizations throughout the economy will continue to automate their operations in order to achieve greater productivity and improved service. Lower prices for computers will also spur the demand for computer service technicians.

Since most people in the computer field are fairly young, few job openings will occur because of death or retirement. Almost all openings will result from the rising demand for computers. These technicians are not usually subject to layoffs during downturns in the economy.

Those most in demand will be technicians experienced and skilled in servicing a broad range of models and brands of equipment. Individuals with at least an associate degree in electronics will find more opportunities than those with no formal education.
**Entry Methods**

Graduates of a two-year or four-year college can ask the school placement service for job leads or for the names of companies that hire and train new workers. Many employers of computer service technicians visit schools to interview graduating students.

Persons who want to become computer service technicians should send a resume and a short cover letter to companies that make data processing equipment, to firms that use computers, or to companies that offer computer services to business and industry. The want ads in newspapers and on the Internet may advertise job openings under “Computer Service Technicians,” or “Computers.” Trade journals may also advertise job opportunities.

**Advancement**

Expert technicians may become specialists or troubleshooters who help other technicians make difficult repairs. They may also work with research and development engineers on the design of new equipment.

Computer service technicians may become supervisors or service managers. They may transfer to other work in production, sales, management, or research and development. They may work with engineers designing equipment and setting up maintenance procedures.

Experience in computer service may qualify technicians for jobs in programming, systems analysis, or teaching. Many instructors of computer service skills are former service technicians. Experienced computer service technicians often become independent computer consultants operating from a home office. Persons interested in electronics might do well as electronics technicians, telephone equipment engineers, or studio operations engineers in radio and television. They might consider other computer work such as that of computer operators, computer programmers, or systems analysts.

**For Further Research**

Accreditation Board for Engineering Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202. Web site: www.abet.org

Association for Computing Machinery, 2 Penn Plaza, Suite 701, New York, NY 10121-0701. Web site: www.acm.org

Association for Information Systems, P.O. Box 2712, Atlanta, GA 30301-2712. Web site: www.aisnet.org

Computing Technology Industry Association, 1815 South Meyers Road, Suite 300, Oakbrook Terrace, IL 60181-5228. Web site: www.comptia.org

Electronics Technicians Association, International, 5 Depot Street, Greencastle, IN 46135. Web site: www.eta-i.org

Institute for Certification of Computing Professionals, 2350 East Devon Avenue, Suite 115, Des Plaines, IL 60018-4610. Web site: www.iccp.org

Institute of Electrical and Electronics Engineers Computer Society, 1730 Massachusetts Avenue, NW, Washington, DC 20036-1992. Web site: www.computer.org

**Acknowledgments**

Chronicle Guidance Publications appreciates the cooperation of the individuals who reviewed the information in this brief.

O*NET™ is a trademark of the U.S. Department of Labor, Employment and Training Administration.