



**Closing The Gap:
Government and Private Sector IT Skills**

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About the Report

The historical IT skills gap that has existed between government and private sector firms appears to be closing in some key areas according to a Brainbench analysis of more than 11,000 online skill assessments. The Brainbench analysis is the first of an ongoing series of reports designed to measure the relative IT skill levels of government and private sector IT services workers.

The data in this report indicates that progress is being made by efforts to improve the IT skills of government workers despite traditional barriers such as lower compensation levels, an aging government workforce and smaller investments in training and continuous learning. Of eight critical technology areas, government IT workers now outperform their private sector counterparts in three technology skill areas; the rapidly growing UNIX/Linux arena, Microsoft Technology Administration and Microsoft Applications skills.

The report shows that progress is being made by all levels of government against what was cited in a 2001 report entitled "The Transforming Power of Information Technology" by the National Academy of Public Administration (NAPA) as a growing crisis in government IT employment and skills. According to the NAPA report, government IT skills are being hampered by a combination of demographics, historical differences between the reward structures of private and public sectors, as well as a lack of government budgets for IT training. The NAPA report has been cited by the Federal Government's Chief Information Officers Council as a key source of information about factors affecting government IT skills.

The following Brainbench report, called the *Closing the Gap: government and Private Sector IT Skills* draws from the world's largest repository of online tests to compare the IT skills level of government and private sector IT workers. The report compares more than 7,000 private sector and over 4,000 public sector test takers in eight key technology skill areas. These skill areas range from entry-level technology awareness to advanced technical skills. The eight skills examined in this report are:

- Entry Level Technology Skills
- Networking Skills
- Database Skills
- Internet Skills
- Unix/Linux Skills
- Programming Language Skills
- Microsoft Technology Administration Skills
- Microsoft Applications Skills

Brainbench tests are delivered as Computer Adaptive Tests (CATs) via the Internet. As test-takers respond to questions, a computer-adaptive test adapts itself to the test-takers skill level by selecting the next item to be presented on the basis of performance on preceding items. The difficulty level of the items is adjusted according to the skill level of the test-taker. The adaptive test engine produces scores that are reflective of the number of questions answered correctly and the difficulty level of those questions.

Methodology

Brainbench's proprietary database containing five million completed tests was examined to determine registered U.S. users with, identified in their profiles as government employees, as well as those registered users who have identified themselves as being employed by private sector IT services firms. Data was derived from 7,096 individuals in IT services and 4,110 government and military users from federal, state and local government entities. Due to the large number of individual tests in the Brainbench portfolio, tests were grouped into eight technology areas. Average scores in each category for government and IT services groups were then derived and contrasted to determine the rankings, despite the differing numbers of private and public sector test takers.

Key Findings

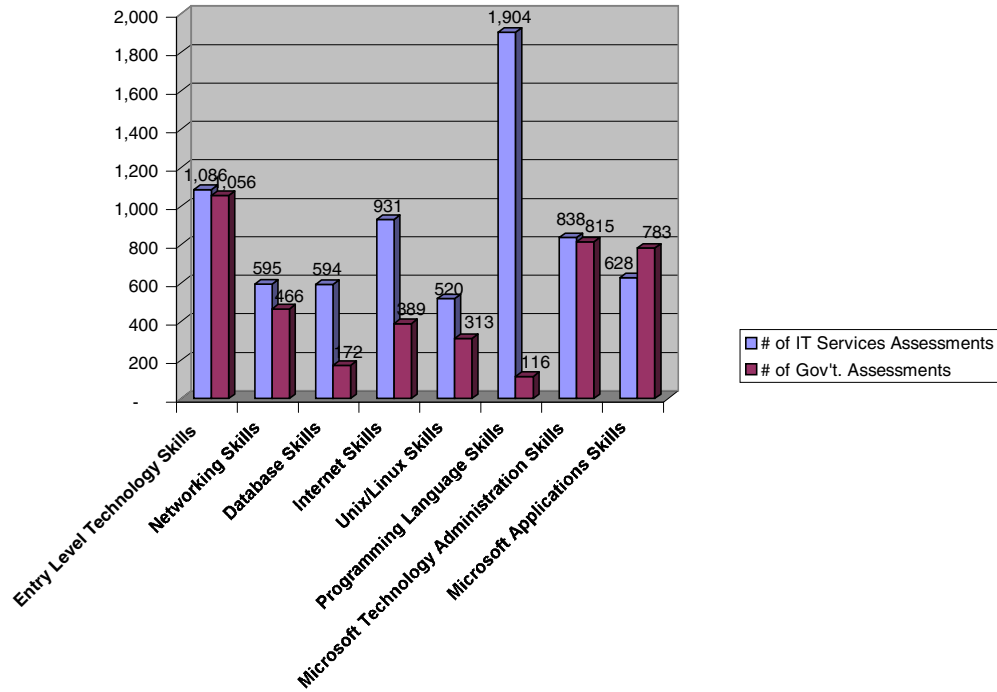
Across eight major technology areas, government IT workers outscored their private sector counterparts in three key areas: Unix/Linux Skills; Microsoft Technology Administration and Microsoft Applications. The Unix/Linux skills area is particularly interesting due to the relatively rapid adoption rates of these technologies by all industry sectors.

Private sector IT services workers outpaced government IT workers in five technology arenas: Entry Level Technology Skills; Database Skills; Networking Skills; Programming Language Skills and Internet Technology Skills.

Government IT skills outpaced private sector IT Services skills by 3% in Unix/Linux Skills, by 5% in Microsoft Technology Administration skills, and by 8% in Microsoft Applications skills. Conversely, private sector IT Services skills outpaced government skills by significant margins (17%) in both the Entry Level Technology Skills and Programming Language Skills. In addition, private sectors skills are 16% better in Database Skills; 12% higher in Networking Skills and 10% higher in Internet Technology. These areas appear to represent significant strengths for the private sector.

IT Skill Areas	Gov't Avg. Score	IT Services Avg. Score	Gov't Performance
Entry Level Technology Skills	2.80	3.35	-17%
Networking Skills	2.34	2.63	-12%
Database Skills	2.39	2.82	-16%
Internet Skills	2.64	2.91	-10%
Unix/Linux Skills	2.60	2.52	3%
Programming Language Skills	2.52	3.02	-17%
Microsoft Technology Administration Skills	2.43	2.30	5%
Microsoft Applications Skills	2.93	2.71	8%

Assessments by Skill Area



The assessments comprising each category include:

Entry Level Technology Skills:

- Computer Electronics
- Computer Fundamentals – Mac OS 8.6
- Computer Fundamentals – Win 95/98
- Computer Industry Knowledge
- Computer Technical Support
- E-Commerce Concepts
- Programmer/Analyst Aptitude
- Programming Concepts

Database Skills

- DB2 Administration (OS/390)
- DB2 Administration (UDB)
- Oracle 7.0 Administration
- Oracle 8.0 Administration
- Oracle 8i Administration
- Oracle Designer 6i
- Oracle Designer 6i
- Oracle Developer 2000
- Oracle Forms 6.0
- Oracle PL/SQL
- RDBMS Concepts
- SQL (ANSI)

Programming Language Skills

C
COBOL II
C++
Java – EJB
Java 1
Java 2
Java 2 Fundamentals
Java 2 GUI
Java 2 Non-GUI
OO Concepts
VB Script 5.5
Visual Basic 5.0
Visual Basic 6.0

Networking Skills

Cisco Network Support
Network Monitoring
Network Security
Network Technical Support
Networking Concepts
Novell GroupWise 5.5 Administration
Novell NetWare 4.11 Administration
Novell NetWare 5.0 Administration
TCP/IP Administration

Microsoft Applications Skills

Access 2000 Programming
Access 97
Access 97 Programming
Excel 97
Excel 97 Fundamentals
Front Page 2000
IE 4.0 Fundamentals
IE 5.5 Fundamentals
Outlook 2000 Fundamentals
Outlook Express 5.0 Fundamentals
PowerPoint 2000 Fundamentals
PowerPoint 97 Fundamentals

Project 2000
Publisher 2000
Windows 2000
Windows 98 Navigation
Word 2000
Word 2000 Fundamentals
Word 97
Word 97 Fundamentals

Microsoft Technology Administration

Exchange Server 5.5 Administration
IIS 4.0 Administration
SMS Server 2.0 Administration
SQL Programming Administration
SQL Server 2000 Programming
SQL Server 7 Programming
Windows 2000 Desktop Administration
Windows 2000 Migration
Windows 2000 Server Administration
Windows 95 Administration
Windows NT 4.0 Workstation Admin

Internet Skills

HomeSite 4.5
HTML 3.2
HTML 4.0
Internet Concepts
Internet Industry Knowledge
Internet Security
Internet Technology Fundamentals
Java Server Pages
Javascript
WWW Concepts
XML

Conclusions:

Based on the above rankings Brainbench believes that government IT workers have significant technology skills in a number of key areas, including the increasingly popular Unix/Linux arena. Based on the IT Services sectors results, it appears that while government IT skills gaps exist, the gap has closed, and been surpassed in some key technology area. government will most likely continue to look to private sector support in such areas such as Networking, Database, Programming Languages and Internet Skills. Brainbench believes that the use of objective skills measurement best practices - as indicated by the data contained within this report - provides those responsible for managing human capital assets within government entities and the private sector with the means to shape the direction of training, hiring and outsourcing decisions.

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