



Citywide Administrative Services

BILL DE BLASIO
Mayor

DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES
BUREAU OF EXAMINATIONS

LISETTE CAMILO
Commissioner

NOTICE OF EXAMINATION

COMPUTER SYSTEMS MANAGER

Exam No. 9011

WHEN TO APPLY: From: October 3, 2018

APPLICATION FEE: \$68.00

To: October 23, 2018

If you choose to pay the application fee with a credit/debit/gift card, you will be charged a fee of 2.49% of the payment amount. This fee is nonrefundable.

YOU ARE RESPONSIBLE FOR READING THIS ENTIRE NOTICE BEFORE YOU SUBMIT YOUR APPLICATION.

WHAT THE JOB INVOLVES:

Computer Systems Managers, under varying levels of managerial or executive direction, with varying degrees of latitude for independent initiative, judgment and decision making, perform difficult and responsible professional managerial work in the planning, organizing and controlling of the overall activities of a major Information Technology (IT) facility. In an agency with an IT activity of a sufficient size, complexity, and/or volume, Computer Systems Managers manage the day-to-day activities of a large computer operation, serve as principal assistants to an IT manager, head one or more units responsible for a major operating function, and/or act as immediate deputies to the head of a very large IT operation. Computer System Managers may also lead a very large IT program overseeing all major components of that program, head a development of a complex computer system, and/or serve as a head of the whole IT department.

All positions combine significant policy input and program impact at an agency-wide level with direct control over all the resources necessary to operate an IT function including applications development, systems development, data communications and networking, database administration, data processing, user services, as well as staff budgeting and procurement. All Computer Systems Managers perform related work and in the temporary absence of the supervisor, may assume the duties of that position.

Special Working Conditions:

Computer Systems Managers may be required to work various shifts including nights, Saturdays, Sundays, and holidays.

(This is a brief description of what you might do in this position and does not include all the duties of this position.)

THE SALARY:

Salaries will be commensurate with the level of responsibility of the managerial assignment and will be consistent with the Managerial Pay Plan.

HOW TO QUALIFY:

You are responsible for determining whether or not you meet the education and experience requirements for this examination prior to submitting your application. If you are found "Not Qualified," your application fee will not be refunded and you may not receive a score.

You will **not** receive credit for education which you obtain after January 31, 2019 or experience which you obtain after the end of the Application Period (October 23, 2018).

EDUCATION AND EXPERIENCE REQUIREMENTS:

1. A master's degree in computer science from an accredited college or university **and** three (3) years of progressively more responsible, full-time, satisfactory experience in Information Technology (IT) including applications development, systems development, data communications and networking, database administration, data processing, or user services. At least eighteen (18) months of this experience must have been in an administrative, managerial or executive capacity in the areas of applications development, systems development, data communications and networking, database administration, data processing, or in the supervision of staff performing these duties; **or**
2. A baccalaureate degree from an accredited college or university **and** four (4) years of progressively more responsible, full-time, satisfactory experience as described in "1" above; **or**
3. A four-year high school diploma or its educational equivalent, **and** six (6) years of progressively more responsible, full-time, satisfactory experience as described in "1" above; **or**
4. A satisfactory combination of education and experience equivalent to "1", "2" or "3" above. However, all candidates must have at least a four-year high school diploma or its educational equivalent and must possess at least three (3) years of experience as described in "1" above, including the eighteen

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(18) months of administrative, managerial, executive or supervisory experience as described in "1" above.

In the absence of a baccalaureate degree, undergraduate credits may be substituted for a maximum of two (2) years of the required experience in IT on the basis of 30 semester credits for six (6) months of the required experience. Graduate credits in computer science may be substituted for a maximum of one (1) year of the required experience in IT on the basis of 30 graduate semester credits in computer science for one (1) year of the required IT experience. **However**, undergraduate and/or graduate credits may **not** be substituted for the eighteen (18) months of experience in an administrative, managerial, executive, or supervisory capacity as described in "1" above.

Experience in an **administrative capacity** must include, but is not limited to, responsibilities such as: monitoring an IT budget; reviewing and approving IT procurement and invoice payments; reviewing and approving contracts with vendors; monitoring and approving IT projects; setting standards and best practices; risk evaluation (e.g., security, reputational, operational); organizational development; chairing or participating in IT Governance and Advisory committees; and/or overseeing vendor relationship management.

Experience in a **managerial capacity** must include, but is not limited to, responsibilities such as: strategic planning for an office/division; creating and implementing policies; setting standards and best practices; defining and documenting project scope; root cause analysis with recommendations; collaborating with other managers and executives to define future state of an IT program; and/or forecasting.

Experience in an **executive capacity** must include, but is not limited to, responsibilities such as: managing multiple groups, areas and/or divisions; formulating the organization's IT strategy/governance; formulating the organization's IT architectural strategy; developing, setting and enforcing the organization's IT policies; and/or developing the organization's IT budget.

Experience in the **supervision of staff** must include, but is not limited to, responsibilities such as: assigning work to staff; monitoring the performance of staff; reviewing the work of staff; training, mentoring and coaching staff; evaluating staff; disciplining staff; writing and administering performance evaluations to staff; and approving time and leave for staff.

The following types of experience are **not acceptable**: superficial use of preprogrammed software without complex programming, design, implementation or management of the product; use of a word processing package; use of a hand held calculator; data entry; operation of data processing hardware or consoles.

The education requirement must be met by January 31, 2019. The experience requirement must be met by the last day of the Application Period (October 23, 2018).

The high school diploma or its educational equivalent must be approved by a State's Department of Education or a recognized accrediting organization. The college or university must be accredited by regional, national, professional, or specialized agencies recognized as accrediting bodies by the U.S. Secretary of Education and by the Council for Higher Education Accreditation (CHEA).

If you were educated outside the United States, you must have your foreign education evaluated to determine its equivalence to education obtained in the United States. This is required **only** if you need credit for your foreign education in this examination. For more information see the Foreign Education Evaluation Guide in the Required Information section.

You must clearly specify in detail all of your relevant education and experience on your Education and Experience Test and submit it by the end of the Application Period. If you are currently employed by the City of New York, do not assume that persons reviewing your Education and Experience Test will know information which you do not provide on your Education and Experience Test, including information about your current job. If you have applied for a previous examination, do not assume that persons reviewing your Education and Experience Test will know about information you provided on a previous Education and Experience Test.

You will not receive credit for education which you obtain after January 31, 2019 or experience which you obtain after the end of the Application Period.

Residency:

City residency is not required for this title.

English Requirement:

You must be able to understand and be understood in English.

Proof of Identity:

Under the Immigration Reform and Control Act of 1986, you must be able to prove your identity and your right to obtain employment in the United States prior to employment with an agency under the jurisdiction of the Commissioner, Department of Citywide Administrative Services.

HOW TO APPLY:

If you believe you meet the requirements in the "How to Qualify" section, submit an application on the Online Application System (OASys) at www.nyc.gov/examsforjobs. Follow the onscreen application instructions for electronically submitting your application and payment, and completing any required information. A unique and valid email address is required to file online. Several internet service providers, including but not limited to Google, Yahoo!, AOL, Outlook.com, and Mail.com offer free email addresses. **All new OASys accounts require verification before a candidate can submit an application to ensure the accuracy of candidate information. Verification is instantaneous for most accounts, but some accounts may require up to two (2) business days to be reviewed by a staff member and resolved. Email notification will be sent to those creating accounts that require additional documentation before they can be resolved. Please keep this information and the application period deadline in mind when creating your account.** The following methods of payment are acceptable: major credit card, bank card associated with a bank account, or a prepaid debit card with a credit card logo which you may purchase online or at various retail outlets.

If you are receiving or participating in certain forms of public assistance/benefits/programs, or are a veteran, you may qualify to have the application fee waived. For more information on eligibility for a fee waiver and documentation requirements, visit the Fee Waiver FAQ on the Online Application System at <https://a856-eeexams.nyc.gov/OLEE/oasys/FAQFeeWaiver.aspx>.

You may come to the DCAS Computer-based Testing & Applications Centers to file for this examination online and submit a money order payable to DCAS (Exams) or to submit documentation for a fee waiver. The centers will be open Monday through Saturday from 9:00 AM to 5:00 PM:

Manhattan	Brooklyn	Queens	Staten Island
2 Lafayette Street 17th Floor New York, NY 10007	210 Joralemon Street 4th Floor Brooklyn, NY 11201	118-35 Queens Boulevard 5th Floor Forest Hills, NY 11375	135 Canal Street 3rd Floor Staten Island, NY 10304

The DCAS Computer-based Testing & Applications Centers will be closed on Saturday, October 6, 2018 and on Monday, October 8, 2018.

Special Circumstances Guide: This guide is located on the DCAS website at www.nyc.gov/html/dcas/downloads/pdf/misc/pdf_c_special_circumstances_guide.pdf and available at the DCAS Computer-based Testing & Applications Centers. This guide gives important information about claiming Veterans' or Legacy credit, and notifying DCAS of a change in your mailing address. Follow all instructions on the Special Circumstances Guide that pertain to you when you complete your "Application for Examination."

REQUIRED INFORMATION:

- 1. Application for Examination:** Follow the online instructions, including those relating to the payment of fee and, if applicable, those found in the Special Circumstances Guide.
- 2. Affirmation Form:** The Affirmation Form, which is found online, must be printed, signed, dated and sent by mail to the address on the form. If DCAS does not receive your completed Affirmation Form, your application will not be considered complete, and your name will not appear on the eligible list for this examination.
- 3. Education and Experience Test:** Fill out **Sections A.1 (if applicable), A.2, A.4 (if applicable), A.5 (if applicable), B, and D (if applicable)**. This test must be filled out completely and in detail for you to receive your proper rating. Follow the online instructions.
- 4. Foreign Education Evaluation Guide: (Required only if you need credit for your foreign education to meet the education and experience requirements):** If you were educated outside the United States, you must have your foreign education evaluated to determine its equivalence to education obtained in the United States. The services that are approved to make this evaluation are listed on the Foreign Education Evaluation Guide located on the Department of Citywide Administrative Services (DCAS) website at www.nyc.gov/html/dcas/downloads/pdf/misc/foreigneducation.pdf. When you contact the evaluation service, ask for a **"document-by-document" (general)** evaluation of your foreign education. **However**, if you intend to claim graduate credits in computer science, as stated under "4" in the "How to Qualify" section on page 1, ask for a **"course-by-course"** evaluation (which includes a **"document-by-document" (general)** evaluation). You must have one of these services submit its evaluation of your foreign education directly to DCAS no later than eight weeks from January 31, 2019.

THE TEST:

Your score will be determined by an education and experience test. You will receive a score of 70 points for meeting the education and experience requirements listed above. After these requirements are met, you will receive additional credit up to a maximum of 100 points on the following basis:

If you have satisfactory, full-time experience in an administrative, managerial or executive capacity in the areas of computer applications programming, systems programming, computer systems development, data telecommunications, data base administration, or planning of data processing, or in the supervision of staff performing these duties for:	You will receive:
At least 1 year but less than 2 years	6 points
At least 2 years but less than 3 years	12 points
At least 3 years but less than 4 years	18 points
At least 4 years but less than 5 years	24 points
5 or more years	30 points

You will receive a maximum of one year of experience credit for each year you worked. If you have any of the above experience on a part-time basis, it will be credited according to the equivalent percent of full-time experience.

You must clearly specify in detail all of your relevant experience on your Education and Experience Test and submit it by the end of the application period. You will **not** receive credit for experience which you obtain **after** the end of the application period. Experience must be obtained **by the last day of the Application Period**.

Experience used to meet the minimum requirements cannot be used to gain additional credit.

CHANGE OF MAILING AND/OR EMAIL ADDRESS:

It is critical that you promptly notify DCAS of any change to your mailing address and/or email address. If we do not have your correct mailing and/or email address, you will not receive information about your exam(s), consideration for appointment and/or important information that may require a response by a specified deadline. Change of mailing and/or email address requests submitted to any agency other than DCAS, such as to the United States Postal Service, will NOT update your records with DCAS.

To update your mailing and/or email address with DCAS, you must submit the change request by mail or in person. Your request must include your full name, social security number, exam title(s), exam number(s), previous mailing and/or email address, and your new mailing and/or email address. Your request can be mailed to DCAS Records Room, 1 Centre Street, 14th Floor, New York, NY 10007 or brought in person to the same address Monday through Friday from 9AM to 5PM. The following link will provide you with the DCAS Data Correction Form: <http://www.nyc.gov/html/dcas/downloads/pdf/misc/dp148a.pdf>.

THE TEST RESULTS:

If you pass the education and experience test, your name will be placed in final score order on an eligible list, you will be given a list number and you will be notified by mail of your test results. The eligible list determines the order by which candidates will be considered for appointment. If you meet all requirements and conditions, you will be considered for appointment if your name is reached on the eligible list. Once a list has been established, it will typically remain active for four years. To learn more about the civil service system go to: http://www.nyc.gov/html/dcas/html/work/civilservice_1.shtml.

ADDITIONAL INFORMATION:**Selective Certification for Certification and/or Special Experience:**

If you have the certification and/or experience listed in one or more of the areas listed below, you may be considered for appointment to positions requiring a certification and/or experience through a process called Selective Certification. If you qualify for Selective Certification, you may be given preferred consideration for positions requiring this certification and/or experience. Your certification(s) and/or experience will be checked by the appointing agency at the time of appointment.

Note: In **Section D** of the Education and Experience Test, please enter the 3-digit code which corresponds to the Selective Certification(s) you wish to be considered for, and separate each with a comma and no space. There should be no more than ten (10) Selective Certification entries per line. For example, if you wish to select Selective Certifications #1, #2, #3 and #4, enter the following in **Section D** of the Education and Experience Test: 065,783,SUM,SUP.

1. **Accela Development and Administration:** At least two (2) years of satisfactory, full-time experience in the analysis, design, development, implementation and maintenance of Accela systems, including Civic Platform and Citizen Access Platform. **To add Selective Certification for Accela Development and Administration, enter "065" in Section D of the Education and Experience Test.**
2. **Advanced Web Content Management Systems Administration:** At least two (2) years of satisfactory, full-time experience in the installation, configuration, implementation, maintenance and enhancement of Web-Content Management Systems. Examples include, but are not limited to: Apache Web Server, Microsoft IIS, Tomcat, JBOSS, WebLogic, WebSphere, IBM MQ, iWay, FileNet, Documentum, TeamSite, Portal, Siebel. **To add Selective Certification for Advanced Web Content Management Systems Administration, enter "783" in Section D of the Education and Experience Test.**
3. **Agile Scrum Certification:** A valid SCRUM certification (e.g., Certified Scrum Professional (CSP) from any institution, PMI Agile Certified Practitioner (PMI-ACP) from the Project Management Institute (PMI), or Certified Scrum Master (CSM) from any institution). **To add Selective Certification for Agile Scrum Certification, enter "SUM" in Section D of the Education and Experience Test.**
4. **Agile Scrum Project Management Experience:** At least two (2) years of satisfactory, full-time IT project management experience implementing packaged or custom built applications, systems, major system components, or integrations between multiple applications or system components; including deployment to, or provisioning of, physical, virtual or cloud-based hosting, **and** at least two (2) years of satisfactory, full-time experience implementing Scrum to manage projects using the Agile software development methodology by conducting daily scrum meetings as the scrum master with complex project teams, **and** at least two (2) years of satisfactory, full-time experience managing multi-disciplinary teams including Business Analysts, Developers, Server Engineers, Network Engineers, Security Engineers, Quality Assurance Testers, and Support Engineers in a matrixed environment **and** at least two (2) years of satisfactory, full-time experience with project management, project portfolio management and IT Service Management tools, such as MS Project, CA Clarity, and BMC Remedy. Acceptable application development projects include enterprise-class technologies such as, but not limited to: HTML5, Java, Spring, .Net, Oracle, SQL server, MQ, Web Services, ETL, and specific product stacks such as Oracle WebLogic, JBOSS, Azure, AWS Elastic Beanstalk, Docker, OBIEE, Informatica, Socrata, Documentum, Law Manager, MS Dynamics CRM, MS SharePoint, and mobile technologies such as IOS and Android development. **To add Selective Certification for Agile Scrum Project Management Experience, enter "SUP" in Section D of the Education and Experience Test.**
5. **AIX Server Administration:** At least two (2) years of satisfactory, full-time experience in AIX System administration. The experience should include, but is not limited to: installation, configuration, administration and tuning enterprise class servers (i.e., IBM AIX 4.x, AIX 5.x, AIX 6.x and above) in large-scale data center operations support function. **To add Selective Certification for AIX Server Administration, enter "339" in Section D of the Education and Experience Test.**
6. **Amazon Web Services (AWS) Certification:** A valid Amazon Web Services (AWS) certification from Amazon Web Services, Inc. **To add Selective Certification for Amazon Web Services (AWS) Development, enter "080" in Section D of the Education and Experience Test.**
7. **API Development:** At least two (2) years of satisfactory, full-time experience in the design, development, implementation, maintenance and enhancement of Application Program Interfaces (APIs). The experience should include, but is not limited to: SOA, SOAP, REST, XML, Java, .NET, TDD - Test-driven Development, Git, Subversion, CVS, Eclipse, Apache Xerces, Tomcat, Jboss, Oracle WebLogic, DOM and Unix. **To add Selective Certification for API Development, enter "API" in Section D of the Education and Experience Test.**

8. **Apple Support Certification:** A valid Apple Certified Technical Coordinator (ACTC) certification from Apple or a valid Apple Certified Macintosh Technician (ACMT) certification from Apple **and** at least two (2) years of satisfactory, full-time experience managing a team(s) supporting Apple systems, including print, graphics and post-editorial support. **To add Selective Certification for Apple Support Management, enter "APS" in Section D of the Education and Experience Test.**
9. **BMC Remedy Development:** At least two (2) years of satisfactory, full-time experience in analysis, design, development, implementation and maintenance of applications including BMC Remedy ITSM 7.x/8.x or higher versions. **To add Selective Certification for BMC Remedy Development, enter "BMC" in Section D of the Education and Experience Test.**
10. **Business Analysis:** At least two (2) years of satisfactory, full-time experience employing User-Centered Analysis techniques (interviews, direct observations, requirement work sessions, etc.) in a variety of systems development life cycle (SDLC) methodologies, including Agile, with experience including eliciting business needs, defining requirements package for IT applications, **and** at least two (2) years leading a team of business analysts, and developing and formalizing software development methodology. **To add Selective Certification for Business Analysis, enter "BNA" in Section D of the Education and Experience Test.**
11. **Business Continuity (BC) and Disaster Recovery (DR) - General:** At least five (5) years of satisfactory, full-time experience assisting in the development of Business Continuity, Disaster Recovery, Emergency Response, Emergency Management, and Crisis Management Plans, Procedures, and documentation and working with business units to identify business process recovery priorities and resource requirements to include essential technology and hardware/software needs. **To add Selective Certification for Business Continuity (BC) and Disaster Recovery (DR) - General, enter "DIS" in Section D of the Education and Experience Test.**
12. **Business Intelligence (BI) Analysis:** At least two (2) years of satisfactory, full-time experience in the analysis, design and implementation of Business Intelligence (BI) applications and reporting solutions that includes tasks and activities utilizing BI concepts and Data Warehousing methodologies (e.g., Star Schemas, Dimensional Models, and Data marts), analyzing and designing solutions using BI Tools and/or data modeling, data copying/ETL (Extract, Transform and Load) design and developing and employing functional artifacts. Examples include, but are not limited to: BI Tools: OBIEE, Jasper, Tableau, Crystal Report, SSRS, Cognos; Data Copying: Informatica, SSIS, Talend, Pentaho, iWay; Functional artifacts: Requirements Definitions, Report Mockups, Report Designs, Data Dictionary, Conceptual data models, Glossary. **To add Selective Certification for Business Intelligence (BI) Analysis, enter "BIA" in Section D of the Education and Experience Test.**
13. **Certified Business Analysis Professional (CBAP) Certification:** A valid certification as a Certified Business Analysis Professional (CBAP) from the International Institute of Business Analysis (IIBA). **To add Selective Certification for Certified Business Analysis Professional (CBAP) Certification, enter "CBA" in Section D of the Education and Experience Test.**
14. **Certified Cloud Security Professional (CCSP) Certification:** A valid certification as a Certified Cloud Security Professional (CCSP) from the (ISC)². **To add Selective Certification for Certified Cloud Security Professional (CCSP) Certification, enter "410" in Section D of the Education and Experience Test.**
15. **Certified Computer Examiner (ISFCE-CCE) Certification:** A valid certification as a Certified Computer Examiner (ISFCE-CCE) from the International Society of Forensic Computer Examiners (ISFCE). **To add Selective Certification for Certified Computer Examiner (ISFCE-CCE) Certification, enter "169" in Section D of the Education and Experience Test.**
16. **Certified Ethical Hacker (CEH) Certification:** A valid certification as a Certified Ethical Hacker (CEH) from the International Council of E-Commerce Consultants (EC-Council). **To add Selective Certification for Certified Ethical Hacker (CEH) Certification, enter "175" in Section D of the Education and Experience Test.**
17. **Certified Expert Penetration Tester (CEPT) Certification:** A valid certification as a Certified Expert Penetration Tester (CEPT) from the Information Assurance Certification Review Board (IACRB). **To add Selective Certification for Certified Expert Penetration Tester (CEPT) Certification, enter "167" in Section D of the Education and Experience Test.**
18. **Certified Forensic Analyst (GIAC-GCFA) Certification:** A valid certification as a Certified Forensic Analyst (GIAC-GCFA) from the Global Information Assurance Certification (GIAC). **To add Selective Certification for Certified Forensic Analyst (GIAC-GCFA) Certification, enter "301" in Section D of the Education and Experience Test.**
19. **Certified Geographic Information Systems Professional (GISP):** A valid certification as a Certified Geographic Information Systems Professional (GISP) from the GIS Certification Institute (GISCI). **To add Selective Certification for Certified Geographic Information Systems Professional (GISP), enter "319" in Section D of the Education and Experience Test.**

20. **Certified in Risk and Information Systems Control (CRISC) Certification:** A valid certification as a Certified in Risk and Information Systems Control (CRISC) from the Information Systems Audit and Control Association (ISACA). **To add Selective Certification for Certified in Risk and Information Systems Control (CRISC) Certification, enter "403" in Section D of the Education and Experience Test.**
21. **Certified Information Security Manager (CISM) Certification:** A valid certification as a Certified Information Security Manager (CISM) from the Information Systems Audit and Control Association (ISACA). **To add Selective Certification for Certified Information Security Manager (CISM) Certification, enter "400" in Section D of the Education and Experience Test.**
22. **Certified Information Systems Auditor (CISA) Certification:** A valid certification as a Certified Information Systems Auditor (CISA) from ISACA (Information Systems Audit and Control Association). **To add Selective Certification for Certified Information Systems Auditor (CISA) Certification, enter "401" in Section D of the Education and Experience Test.**
23. **Certified Information Systems Security Professional (CISSP) Certification:** A valid certification as a Certified Information Systems Security Professional (CISSP) from the (ISC)². **To add Selective Certification for Certified Information Systems Security Professional (CISSP) Certification, enter "413" in Section D of the Education and Experience Test.**
24. **Certified Penetration Testing Engineer (C)PTE) Certification:** A valid certification as a Certified Penetration Testing Engineer (C)PTE) from Mile2. **To add Selective Certification for Certified Penetration Testing Engineer (C)PTE) Certification, enter "470" in Section D of the Education and Experience Test.**
25. **Certified Secure Software Lifecycle Professional (CSSLP) Certification:** A valid certification as a Certified Secure Software Lifecycle Professional (CSSLP) from the (ISC)². **To add Selective Certification for Certified Secure Software Lifecycle Professional (CSSLP) Certification, enter "414" in Section D of the Education and Experience Test.**
26. **Certified Security Testing Associate (CSTA) Qualification:** Completion of the Certified Security Testing Associate (CSTA) course from 7Safe. **To add Selective Certification for Certified Security Testing Associate (CSTA) Qualification, enter "170" in Section D of the Education and Experience Test.**
27. **Certified Software Tester (CSTE) Certification:** A valid certification as a Certified Software Tester (CSTE) from the International Software Certifications Board (ISCB). **To add Selective Certification for Certified Software Tester (CSTE) Certification, enter "CTC" in Section D of the Education and Experience Test.**
28. **Cisco Call Manager or Cisco Contact Center:** At least two (2) years of satisfactory, full-time experience in designing, developing, installing, configuring, integrating, managing, supporting and/or enhancing Cisco Call Manager or Cisco Contact Center. **To add Selective Certification for Cisco Call Manager or Cisco Contact Center, enter "CCM" in Section D of the Education and Experience Test.**
29. **Cisco Certified Design Professional (CCDP) Certification:** A valid certification as a Cisco Certified Design Professional (CCDP). **To add Selective Certification for Cisco Certified Design Professional (CCDP) Certification, enter "150" in Section D of the Education and Experience Test.**
30. **Cisco Certified Internet Expert (CCIE) Certification:** A valid certification as a Cisco Certified Internetwork Expert (CCIE). **To add Selective Certification for Cisco Certified Internet Expert (CCIE) Certification, enter "CCI" in Section D of the Education and Experience Test.**
31. **Cisco Certified Network Associate (CCNA) Certification:** A valid certification as a Cisco Certified Network Associate (CCNA). **To add Selective Certification for Cisco Certified Network Associate (CCNA) Certification, enter "15C" in Section D of the Education and Experience Test.**
32. **Cisco Certified Network Professional (CCNP) Certification:** A valid certification as a Cisco Certified Network Professional (CCNP) Routing and Switching. **To add Selective Certification for Cisco Certified Network Professional (CCNP) Certification, enter "155" in Section D of the Education and Experience Test.**
33. **Cisco Certified Network Professional Security (CCNP Security) Certification:** A valid certification as a Cisco Certified Network Professional Security (CCNP Security) Routing and Switching. **To add Selective Certification for Cisco Certified Network Professional Security (CCNP Security) Certification, enter "160" in Section D of the Education and Experience Test.**
34. **Cloud Architecture:** At least two (2) years of satisfactory, full-time experience in the design, development and support working to design highly scalable, flexible, and resilient cloud architectures (IaaS, PaaS, SaaS), automation, orchestration, cost frameworks, and public/private/hybrid cloud

architecture. **To add Selective Certification for Cloud Architecture, enter "CAH" in Section D of the Education and Experience Test.**

35. **CompTIA Advanced Security Practitioner (CASP) Certification:** A valid certification as a CompTIA Advanced Security Practitioner (CASP). **To add Selective Certification for CompTIA Advanced Security Practitioner (CASP) Certification, enter "CAY" in Section D of the Education and Experience Test.**
36. **CompTIA Security+ Certification:** A valid certification as a CompTIA Security+. **To add Selective Certification for CompTIA Security+ Certification, enter "230" in Section D of the Education and Experience Test.**
37. **Computer Hacking Forensic Investigator (CHFI) Certification:** A valid certification as a Certified Forensic Analyst (GIAC-GCFA) from the International Council of E-Commerce Consultants (EC-Council). **To add Selective Certification for Computer Hacking Forensic Investigator (CHFI) Certification, enter "CHF" in Section D of the Education and Experience Test.**
38. **Computer Telephony Integration Systems Administration:** At least two (2) years of satisfactory, full-time experience in administering, supporting, designing, developing, installing, configuring, implementing, maintaining and/or enhancing Computer Telephony Integration systems. Examples include, but are not limited to: Genesys, PBX, Nortel or/and Avaya Telephony system IIS, Siebel, MS Dynamics, Oracle CRM and Salesforce with strong knowledge of Unix, Linux and SQL. **To add Selective Certification for Computer Telephony Integration Systems Administration, enter "CTI" in Section D of the Education and Experience Test.**
39. **Configuration Management Development:** At least two (2) years of satisfactory, full-time experience in design, development, implementation, maintenance and enhancement of configuration management development in a web-based environment. The experience should include, but is not limited to: TeamCity, Hudson, Chef and TFS - Team Foundation Server, Ruby on Rail, Python, PHP, Git, Subversion, Unix and Windows. **To add Selective Certification for Configuration Management Development, enter "CMD" in Section D of the Education and Experience Test.**
40. **Content Management Systems Development:** At least two (2) years of satisfactory, full-time experience in the design, development, implementation, maintenance and enhancement of content management systems development. The experience should include, but is not limited to: EMC Documentum, Java, ANT, TeamCity, Subversion, Rules Engine and Junit. **To add Selective Certification for Content Management Systems Development, enter "MSD" in Section D of the Education and Experience Test.**
41. **Data Science:** At least two (2) years of satisfactory, full-time experience in cleaning, analyzing, modeling, predicting, and visualization of data from a variety of sources (SQL and No-SQL databases, files, geospatial formats, open data) using methods such as machine learning, deep learning, reinforcement learning, supervised and unsupervised learning, time-series analysis, genetic algorithms, and/or clustering and dimensionality reduction. The experience should include, but is not limited to using tools such as Python (numpy, scipy, pandas, scikit-learn, matplotlib, keras), R, Hadoop, Spark and Tensorflow. **To add Selective Certification for Data Science, enter "DAC" in Section D of the Education and Experience Test.**
42. **Database Management Systems Certification:** A valid professional certification in one or more database management systems (e.g., Oracle 11g, Microsoft SQL Server, IBM DB2, Sybase, MySQL). **To add Selective Certification for Database Management Systems Certification, enter "219" in Section D of the Education and Experience Test.**
43. **EC-Council Certified Security Analyst (ECSA) Certification:** A valid certification as an EC-Council Certified Security Analyst (ECSA). **To add Selective Certification for EC-Council Certified Security Analyst (ECSA) Certification, enter "236" in Section D of the Education and Experience Test.**
44. **E-discovery:** At least two (2) years of satisfactory, full-time experience in administering, supporting, maintaining, implementing, and enhancing e-discovery systems, tools, and processes for the collection, processing, hosting, review, analysis, production, and/or presentation of electronically stored information in litigation and/or investigations. **To add Selective Certification for E-discovery - General, enter "23D" in Section D of the Education and Experience Test.**
45. **EMC Certified Storage Administration (Isilon Specialist):** A valid certification as an EMC Certified Storage Administrator Specialist (Isilon Solutions) from Network Appliance. **To add Selective Certification for EMC Certified Storage Administration (Isilon Specialist), enter "24E" in Section D of the Education and Experience Test.**
46. **EMC Certified Storage Administration (SAN Specialist):** A valid certification as an EMC Certified Storage Administrator Specialist (SAN Solutions) from Network Appliance. **To add Selective Certification for EMC Certified Storage Administration (SAN Specialist), enter "24B" in Section D of the Education and Experience Test.**

47. **EMC Certified Storage Administration (VMAX Solutions Specialist):** A valid certification as an EMC Certified Storage Administrator Specialist (VMAX Solutions) from Network Appliance. **To add Selective Certification for EMC Certified Storage Administration (VMAX Solutions Specialist), enter "24C" in Section D of the Education and Experience Test.**
48. **EMC Certified Storage Administration (VNX Solutions Specialist):** A valid certification as an EMC Certified Storage Administrator Specialist (VNX Solutions) from Network Appliance. **To add Selective Certification for EMC Certified Storage Administration (VNX Solutions Specialist), enter "24D" in Section D of the Education and Experience Test.**
49. **EnCase Certified Examiner (EnCE) Certification:** A valid certification as an EnCase Certified Examiner (EnCE) from Guidance Software. **To add Selective Certification for EnCase Certified Examiner (EnCE) Certification, enter "314" in Section D of the Education and Experience Test.**
50. **Enterprise IT Governance:** A valid Certified in the Governance of Enterprise IT (CGEIT) certification from the Information Systems Audit and Control Association, Inc. (ISACA) **and** at least two (2) years of satisfactory, full-time experience managing or supporting the governance of IT in a large organization. **To add Selective Certification for Enterprise IT Governance, enter "402" in Section D of the Education and Experience Test.**
51. **Expert Systems Manager:** At least two (2) years of satisfactory, full-time experience in configuring and administering expert systems designed to understand text, auto-classify documents, and/or provide suggested answers based on AI engines and decision trees. Examples of expert systems include, but are not limited to: Neota Systems, Kira Systems, and IBM Watson. **To add Selective Certification for Expert Systems Manager, enter "25K" in Section D of the Education and Experience Test.**
52. **Firewall System Operations:** At least five (5) years of satisfactory, full-time experience maintaining firewall operational security infrastructure through the identification and evaluation of security protection measures and controls around the technical operations infrastructure; must have been responsible for the operations and maintenance of enterprise information security firewall controls and for ensuring the appropriate operational security procedures are maintained for information systems, programs and data. **To add Selective Certification for Firewall System Operations, enter "279" in Section D of the Education and Experience Test.**
53. **Front-End Development:** At least two (2) years of satisfactory, full-time experience in HTML, HTML5, CSS, CSS3, Javascript, Enterprise Content Management System, Photo/Graphics Editing Software. Examples include, but are not limited to, AngularJS, React, AJAX, XML, JSON and/or responsive web development. **To add Selective Certification for Front-End Development, enter "FED" in Section D of the Education and Experience Test.**
54. **Geospatial Application Development:** At least five (5) years of satisfactory, full-time experience in the design, development, implementation, maintenance or enhancement of responsive web or mobile geospatial and/or mapping applications and/or services. Examples include, but are not limited to: ESRI, Oracle Spatial, PostGIS, Open Geo Suite, Google, Mapbox, CartoDB, Java, JavaScript and Python. **To add Selective Certification for Geospatial Application Development, enter "112" in Section D of the Education and Experience Test.**
55. **Geospatial Systems Administration:** At least five (5) years of satisfactory, full-time experience in: Geospatial Systems Architecture, Geospatial Data Architecture, Geospatial Application Development, Geospatial Application Development Management, Geospatial Database Administration, Geospatial Map Server Administration, or Geospatial Systems Administration. **To add Selective Certification for Geospatial Systems Administration, enter "11G" in Section D of the Education and Experience Test.**
56. **GIAC Penetration Tester (GPEN) Certification:** A valid certification as a GIAC Penetration Tester (GPEN) from the Global Information Assurance Certification. **To add Selective Certification for GIAC Penetration Tester (GPEN) Certification, enter "313" in Section D of the Education and Experience Test.**
57. **GIAC Security Essentials (GSEC) Certification:** A valid certification as a GIAC Security Essentials (GSEC) from the Global Information Assurance Certification. **To add Selective Certification for GIAC Security Essentials (GSEC) Certification, enter "309" in Section D of the Education and Experience Test.**
58. **IASSC Belt Certification:** A valid Lean Six Sigma Belt Certification issued by the International Association for Six Sigma Certification (IASSC). **To add Selective Certification for IASSC Green Belt Certification, enter "LSS" in Section D of the Education and Experience Test.**
59. **IIBA CCBA Certification:** A valid Certification of Competency in Business Analysis (CCBA) certification from the International Institute of Business Analysis (IIBA). **To add Selective**

Certification for IIBA CCBA Certification, enter "CCB" in Section D of the Education and Experience Test.

60. **IIBA Entry Certificate in Business Analysis (ECBA) Certification:** A valid Entry Certificate in Business Analysis (ECBA) certification from the International Institute of Business Analysis (IIBA). **To add Selective Certification for IIBA Entry Certificate in Business Analysis (ECBA) Certification, enter "390" in Section D of the Education and Experience Test.**
61. **Incident Command Structure (ICS) Certification:** A valid Incident Command Structure (ICS) certification such as FEMA's Professional Development Series certificate or an IS-100.b, IS-200.b, IS-700, or IS-800.b certificate. **To add Selective Certification for Incident Command Structure (ICS) Certification, enter "382" in Section D of the Education and Experience Test.**
62. **Information Security Design Architecture:** At least five (5) years of satisfactory, full-time experience in security architecture design and leading security efforts assisting with the integration and initial implementation of solutions, which must include experience playing a critical role in the development and management of a security architecture process that enables the development and implementation of security solutions and capabilities that are clearly aligned with business, technology and threat drivers. **To add Selective Certification for Information Security Design Architecture, enter "39J" in Section D of the Education and Experience Test.**
63. **Information Security Engineering:** At least five (5) years of satisfactory, full-time experience in systems security analysis and implementation, security engineering, design assurance, testing, software security engineering, program design, configuration management, integration and testing of Information security products and techniques and testing and validating security measures active on security infrastructure devices for the protection of computer systems, networks and information systems. **To add Selective Certification for Information Security Engineering, enter "39K" in Section D of the Education and Experience Test.**
64. **Information Technology Infrastructure Library (ITIL) Foundation Certification:** A valid Information Technology Infrastructure Library (ITIL) Foundation certification from Axelos. **To add Selective Certification for Information Technology Infrastructure Library (ITIL) Foundation Certification, enter "39E" in Section D of the Education and Experience Test.**
65. **Information Technology Infrastructure Library (ITIL) Practitioner Certification:** A valid Information Technology Infrastructure Library (ITIL) Practitioner certification from Axelos. **To add Selective Certification for Information Technology Infrastructure Library (ITIL) Practitioner Certification, enter "39F" in Section D of the Education and Experience Test.**
66. **Integration Development:** At least two (2) years of satisfactory, full-time experience in the design, development, implementation, maintenance and enhancement of application and data integrations using enterprise service bus, messaging middleware technologies and ETL technologies. Examples include, but are not limited to: WebSphere Message Broker; WebSphere MQ, WebSphere DataPower, iWay Service Manager, MuleSoft, SnapLogic, JBoss Fuse, Dell Bhoomi, WSO2, Informatica and Talend. **To add Selective Certification for Integration Development, enter "39L" in Section D of the Education and Experience Test.**
67. **International Institute for Software Testing (IIST) Certification:** A valid International Institute for Software Testing (IIST) certification from the International Institute for Software Testing. **To add Selective Certification for International Institute for Software Testing (IIST) Certification, enter "39N" in Section D of the Education and Experience Test.**
68. **International Software Certification Board (ISCB) Certification:** A valid International Software Certification Board (ISCB) certification from the International Software Certification Board. **To add Selective Certification for International Software Certification Board (ISCB) Certification, enter "39O" in Section D of the Education and Experience Test.**
69. **International Software Testing Qualification Board (ISTQB) Certification:** A valid International Software Testing Qualification Board (ISTQB) certification from the International Software Testing Qualification Board. **To add Selective Certification for International Software Testing Qualification Board (ISTQB) Certification, enter "405" in Section D of the Education and Experience Test.**
70. **Intrusion Prevention System Operations:** At least five (5) year of satisfactory, full-time experience monitoring an enterprise network using Intrusion Prevention System(IPS) Technologies, for malicious activities such as security threats and policy violations. **To add Selective Certification for Intrusion Prevention System Operations, enter "39P" in Section D of the Education and Experience Test.**
71. **IT Architecture:** At least five (5) years of satisfactory, full-time hands-on IT architecture experience, three (3) years of which **must** have been in one or more of the following areas: 1) navigating complex political/organizational environments while addressing business needs and delivering effective solutions; 2) architecting complex solutions that meet functional needs while addressing key architectural goals (e.g., interoperability, scalability, security, extensibility, and robustness); 3)

designing, integrating, and delivering complex information technology solutions that support architectural design. **To add Selective Certification for IT Architecture, enter "39R" in Section D of the Education and Experience Test.**

72. **IT Program Management:** At least five (5) years of satisfactory, full-time IT program management experience implementing custom-built applications, systems, major system components, or integrations between multiple applications or system components; implementing packaged (i.e., commercial off-the-shelf, or COTS) applications, systems, or integrations between multiple applications or system components; including deployment to, or provisioning of, physical, virtual or cloud-based hosting, five (5) years of which **must** be in managing programs consisting of multiple, related, IT projects including directing multi-disciplinary teams in a matrixed environment and at least two (2) years of experience with project management, project portfolio management and IT Service Management tools, such as MS Project, CA Clarity, and BMC Remedy. **To add Selective Certification for IT Program Management, enter "42E" in Section D of the Education and Experience Test.**
73. **IT Project Management:** At least two (2) years of satisfactory, full-time IT project management experience implementing packaged or custom built applications, systems, major system components, or integrations between multiple applications or system components; including deployment to, or provisioning of, physical, virtual or cloud-based hosting, **and** at least two (2) years of satisfactory, full-time experience managing multi-disciplinary teams including Business Analysts, Developers, Server Engineers, Network Engineers, Security Engineers, Quality Assurance Testers, and Support Engineers in a matrixed environment **and** at least two (2) years of satisfactory, full-time experience with project management, project portfolio management and IT Service Management tools, such as MS Project, CA Clarity, and BMC Remedy. Acceptable application development projects include enterprise-class technologies such as, but not limited to: HTML5, Java, Spring, .Net, Oracle, SQL server, MQ, Web Services, ETL, and specific product stacks such as Oracle WebLogic, JBOSS, Azure, AWS Elastic Beanstalk, Docker, OBIEE, Informatica, Socrata, Documentum, Law Manager, MS Dynamics CRM, MS SharePoint, and mobile technologies such as IOS and Android development. **To add Selective Certification for IT Project Management, enter "42B" in Section D of the Education and Experience Test.**
74. **Kinetic Development:** At least two (2) years of satisfactory, full-time experience in design, development, implementation and maintenance of applications including Kinetic Requests 5.x, Kinetic Survey 5.x. Experience with Kinetic Task Engine 3.x or higher. The experience should include, but is not limited to tasks such as the installation, configuration and administration of Kinetic Requests 5.x, Kinetic Survey 5.x and Task Engine 3.x or higher, and BMC Remedy ARS/ITSM 8.x and/or higher. **To add Selective Certification for Kinetic Development, enter "KDE" in Section D of the Education and Experience Test.**
75. **Mainframe Operations Management:** At least five (5) years of satisfactory, full-time experience overseeing the day-to-day operations and overall activities of a mainframe computer operations, production and data control environment. The experience should include, but is not limited to: developing and leading the execution of operational strategic initiatives; monitoring daily mainframe performance and issues; directing all activities associated with ensuring reliability and availability of the computer systems and related applications; and directing complex job setups, breakdown and distribution for all applications. **To add Selective Certification for Mainframe Operations Management, enter "46C" in Section D of the Education and Experience Test.**
76. **Messaging & Collaboration Engineering:** At least five (5) years of satisfactory, full-time experience working with MS Exchange, MS SharePoint, MS Lync, Storage Devices (including NetApp and EMC), BES, Windows Server, Archiving Solutions (including Enterprise Vault), eDiscovery, Scripting languages such as vbscript and PowerShell. **To add Selective Certification for Messaging & Collaboration Engineering, enter "467" in Section D of the Education and Experience Test.**
77. **Microsoft Certified Solutions Associate (MCSA) Certification:** A valid certification as a Microsoft Certified Solutions Associate (MCSA) from Microsoft. **To add Selective Certification for Microsoft Certified Solutions Associate (MCSA) Certification, enter "MCA" in Section D of the Education and Experience Test.**
78. **Microsoft Certified Solutions Expert (MCSE) Certification:** A valid certification as a Microsoft Certified Solutions Expert (MCSE) from Microsoft. **To add Selective Certification for Microsoft Certified Solutions Expert (MCSE) Certification, enter "MCE" in Section D of the Education and Experience Test.**
79. **Microsoft Project Certification:** A valid International Institute for Learning Microsoft Project certification. **To add Selective Certification for Microsoft Project Certification, enter "46R" in Section D of the Education and Experience Test.**
80. **Mobile Applications Development:** At least two (2) years of satisfactory, full-time experience in design, development, implementation, maintenance and enhancement of mobile application development. The experience should include, but is not limited to: Swift, Objective-C, Java, Android API, xCode, MAC OS X, Google Maps, and Test-driven Development (TDD). **To add Selective**

Certification for Mobile Application Development, enter "475" in Section D of the Education and Experience Test.

81. **Municipal Information Technology Experience:** At least two (2) years of satisfactory, full-time Information Technology experience working within a municipal government in a similar position, which provides services for a city with over 1 million in population. **To add Selective Certification for Municipal Information Technology Experience, enter "ITM" in Section D of the Education and Experience Test.**
82. **NetApp Certified Data Administrator (NCDA) Certification:** A valid certification as a NetApp Certified Data Administrator (NCDA) from Network Appliance. **To add Selective Certification for NetApp Certified Data Administrator (NCDA) Certification, enter "490" in Section D of the Education and Experience Test.**
83. **NoSQL Administrator:** At least two (2) years of satisfactory, full-time experience in NoSQL (e.g., MongoDB, Couchbase, Cassandra, etc.) administration and development **or** at least four (4) years of satisfactory, full-time experience in NoSQL database performance management and tuning, database fault analysis and resolution effective Database Backup/Recovery strategy deployment. **To add Selective Certification for NoSQL Administrator, enter "541" in Section D of the Education and Experience Test.**
84. **Offensive Security Certified Professional (OSCP) Certification:** A valid certification as an Offensive Security Certified Professional (OSCP) from Offensive Security. **To add Selective Certification for Offensive Security Certified Professional (OSCP) Certification, enter "568" in Section D of the Education and Experience Test.**
85. **Oracle DBA:** At least two (2) years of satisfactory, full-time experience as an Oracle DBA implementing and managing Oracle RAC environments, implementing Grid Infrastructure release 11.2 or higher on a Unix/Linux environment, implementing and maintaining ASM cluster Filesystem, patching grid infrastructure software, and implementing instance caging. **To add Selective Certification for Oracle DBA, enter "580" in Section D of the Education and Experience Test.**
86. **Oracle/SQL Server Database Development Management:** At least two (2) years of satisfactory, full-time experience in web application development using .NET, Oracle or SQL Server technologies utilizing Customer Relationship Management (CRM), .NET, database development and systems integration to provide technical solutions, functional teams, and user communities; assigning priorities and responsibilities to application developers on the team, monitoring the developer's progress and completion of web application. **To add Selective Certification for Oracle/SQL Server Database Development Management, enter "58S" in Section D of the Education and Experience Test.**
87. **Orion Health Rhapsody Professional Certification:** A valid certification as an Orion Health Rhapsody Professional from Orion Health. **To add Selective Certification for Orion Health Rhapsody Professional Certification, enter "58Z" in Section D of the Education and Experience Test.**
88. **Perimeter Security System Management:** At least five (5) years of satisfactory, full-time experience maintaining and administering perimeter security systems such as firewalls and intrusion detection systems. The experience should include knowledge and use of network security concepts, analyzing and designing solutions using enterprise level security devices, and hands-on experience with all phases of firewalls, firewall change requests, firewall configuration, network services, and network security device configurations. **To add Selective Certification for Perimeter Security System Management, enter "595" in Section D of the Education and Experience Test.**
89. **PMI Certified Associate in Project Management (CAPM) Certification:** A valid certification as a Certified Associate in Project Management (CAPM) from the Project Management Institute (PMI). **To add Selective Certification for PMI Certified Associate in Project Management (CAPM) Certification, enter "CAP" in Section D of the Education and Experience Test.**
90. **PMI Portfolio Management Professional (PfMP) Certification:** A valid certification as a Portfolio Management Professional (PfMP) from the Project Management Institute (PMI). **To add Selective Certification for PMI Portfolio Management Professional (PfMP) Certification, enter "587" in Section D of the Education and Experience Test.**
91. **PMI Professional in Business Analysis (PMI-PBA) Certification:** A valid certification as a PMI Professional in Business Analysis (PMI-PBA) from the Project Management Institute (PMI). **To add Selective Certification for PMI Professional in Business Analysis (PMI-PBA) Certification, enter "58T" in Section D of the Education and Experience Test.**
92. **PMI Program Management Professional (PgMP) Certification:** A valid certification as a Program Management Professional (PgMP) from the Project Management Institute (PMI). **To add Selective Certification for PMI Program Management Professional (PgMP) Certification, enter "58U" in Section D of the Education and Experience Test.**

93. **PMI Project Management Professional (PMP) Certification:** A valid certification as a Project Management Professional (PMP) from the Project Management Institute (PMI). **To add Selective Certification for PMI Project Management Professional (PMP) Certification, enter "58V" in Section D of the Education and Experience Test.**
94. **PMI Risk Management Professional (PMI-RMP) Certification:** A valid certification as a PMI Risk Management Professional (PMI-RMP) from the Project Management Institute (PMI). **To add Selective Certification for PMI Risk Management Professional (PMI-RMP) Certification, enter "58W" in Section D of the Education and Experience Test.**
95. **PMI Scheduling Professional (PMI-SP) Certification:** A valid certification as a PMI Scheduling Professional (PMI-SP) from the Project Management Institute (PMI). **To add Selective Certification for PMI Scheduling Professional (PMI-SP) Certification, enter "58X" in Section D of the Education and Experience Test.**
96. **PRINCE2 Certification:** A valid PRINCE2 certification from Axelos **and** at least two (2) years of satisfactory, full-time IT project management experience. **To add Selective Certification for PRINCE2 Certification, enter "PCE" in Section D of the Education and Experience Test.**
97. **Professional CRM Certification** A valid professional certification in one or more Customer Relationship Management (CRM) tools (e.g., Oracle Siebel, Microsoft Dynamics, Oracle CRM, Salesforce). **To add Selective Certification for Professional CRM Certification, enter "590" in Section D of the Education and Experience Test.**
98. **Project Management Professional (PMP) Certification:** A valid Project Management Professional (PMP) certification from the Project Management Institute (PMI) or an accredited college or university or from the International Organization for Project Management (IO4PM) **To add Selective Certification for Program Management Professional (PMP) Certification, enter "PMP" in Section D of the Education and Experience Test.**
99. **Project+ Certification:** A valid Project+ certification from CompTia **and** at least two (2) years of satisfactory, full-time IT project management experience. **To add Selective Certification for Project + Certification, enter "598" in Section D of the Education and Experience Test.**
100. **RACF Security Administration:** At least five (5) years of satisfactory, full-time experience in processing access requests in a large mainframe environment including Mainframe security - RACF (IBM), overseeing RACF security administration, maintaining accounts to control access to information and applications, analyzing and resolving problems related to mainframe access control, user administration, and operating level system security. **To add Selective Certification for RACF Security Administration, enter "RSA" in Section D of the Education and Experience Test.**
101. **Red Hat Certified Engineer (RHCE) Certification:** A valid certification as a Red Hat Certified Engineer (RHCE) from Red Hat. **To add Selective Certification for Red Hat Certified Engineer (RHCE) Certification, enter "605" in Section D of the Education and Experience Test.**
102. **Salesforce Certified Platform Developer I Certification:** A valid certification as a Salesforce Certified Platform Developer I from Salesforce.com. **To add Selective Certification for Salesforce Certified Platform Developer I Certification, enter "66P" in Section D of the Education and Experience Test.**
103. **Senior Mainframe IDMS Programming:** At least five (5) years of satisfactory, full-time Mainframe IDMS programming experience in the following: IDMS online (COBOL ADSO, ADSA, ADSC, MAPC, IDD, OLQ); IDMS Batch (COBOL, JCL, CULPRIT, SAS, FOCUS, VSAM); TSO/ISPF, ITOM. Experience must include: business applications analysis and design, writing technical specifications, coding, performing quality assurance, trouble-shooting and resolving production problems; conducting implementation/migration, writing documentation, and providing off-hours production support. **To add Selective Certification for Senior Mainframe IDMS Programming, enter "IDM" in Section D of the Education and Experience Test.**
104. **Senior Mainframe Storage Engineering:** At least five (5) years of satisfactory, full-time experience in storage management in the z/OS arena provisioning, deploying, and maintaining heterogeneous mainframe storage environments, including administration and use of: DFSMS/RMM, DFHSM, DFSMS, FlashCopy, PPRC, and ICF catalogs. **To add Selective Certification for Senior Mainframe Storage Engineering, enter "466" in Section D of the Education and Experience Test.**
105. **Senior z/OS Systems Engineering:** At least five (5) years of satisfactory, full-time Mainframe experience in operating systems programming and administration of standard z/OS administration tools e.g. SMP/E, HCD, ISPF, DF/SMS/HSM/RMM, and Tivoli SA. **To add Selective Certification for Senior z/OS Systems Engineering, enter "ZOS" in Section D of the Education and Experience Test.**

106. **Senior z/VM & z/Linux Systems Engineering:** At least five (5) years of satisfactory, full-time programming experience with IBM Assembler Language, VM and VM-related products, and languages including REXX, CMS Pipelines, RSCS, and TCP/IP. Experience must include: VM system administration and end user support; working with Linux running under z/VM; TCP/IP networking, particularly in a virtual environment utilizing OSA2, OSA3, and V-switch technology; or Linux server administration on z/VM. **To add Selective Certification for Senior z/VM & z/Linux Systems Engineering, enter "810" in Section D of the Education and Experience Test.**
107. **ServiceNow Development:** At least two (2) years of satisfactory, full-time experience in analysis, design, development, implementation and maintenance of ServiceNow-based applications and environments. **To add Selective Certification for ServiceNow Development, enter "61M" in Section D of the Education and Experience Test.**
108. **Software Architecture Professional Certification:** A valid Software Architecture Professional certification from Software Engineering Institute (SEI). **To add Selective Certification for Software Architecture Professional Certification, enter "61Q" in Section D of the Education and Experience Test.**
109. **Software Quality Assurance Testing:** At least two (2) years of satisfactory, full-time experience in at least one of the following areas: 1) Automating functional test cases for applications with browser based user interfaces or designed for mobile devices using UFT/QTP or open source test automation tools (e.g., Selenium IDE, Selenium WebDriver) and/or 2) Performing functional testing tasks for applications with browser-based user interface and web services or designed for mobile devices including but not limited to analyzing business requirements for completeness and testability; designing requirements based test cases; executing test cases; and registering, reporting and tracking defects using Micro Focus Quality Center as the test management system; and/or 3) Conducting performance testing activities such as analyzing application functionality and architecture; script creation; execution, analysis, and reporting of results; troubleshooting application performance issues; and deep diagnostics using Micro Focus LoadRunner and/or Performance Center for applications with a browser-based user interface. **To add Selective Certification for Software Quality Assurance Testing, enter "66Z" in Section D of the Education and Experience Test.**
110. **SQL DBA:** At least two (2) years of satisfactory, full-time experience in Microsoft SQL Server Administration and Development. **To add Selective Certification for SQL DBA, enter "718" in Section D of the Education and Experience Test.**
111. **Storage Engineering:** At least two (2) years of satisfactory, full-time experience in Storage Area Network design, configuration and administration, including technical knowledge of major storage platforms and switches, and OS environments including Windows, UNIX and Linux. **To add Selective Certification for Storage Engineering, enter "SAN" in Section D of the Education and Experience Test.**
112. **Systems Security Certified Practitioner (SSCP) Certification:** A valid certification as a Systems Security Certified Practitioner (SSCP) from (ISC)². **To add Selective Certification for Systems Security Certified Practitioner (SSCP) Certification, enter "412" in Section D of the Education and Experience Test.**
113. **Telecommunication/VOIP:** At least two (2) years of satisfactory, full-time experience in managing and overseeing the design, development, installation, configuration, integration, management, support and/or enhancement of Voice-Over-IP System. **To add Selective Certification for Telecommunication/VOIP, enter "725" in Section D of the Education and Experience Test.**
114. **Test Automation:** At least two (2) years of satisfactory, full-time experience automating functional test cases for applications with browser based user interfaces using UFT/QTP, including but not limited to: test automation methods like recording/parametrization/play back; descriptive programming and manual coding in VBScript; open source test automation tools (e.g., Selenium IDE, Selenium WebDriver); UI object recognition with tools like Object Spy, Firebug, and Chrome Developer; and data driven testing with various file formats like flat files, XML, Excel and SQL for data verification purposes. **To add Selective Certification for Test Automation, enter "726" in Section D of the Education and Experience Test.**
115. **The Open Group Certification:** A valid certification as an Open Group Architecture Framework (TOGAF) or Certified Architect (CA) from The Open Group. **To add Selective Certification for The Open Group Certification, enter "727" in Section D of the Education and Experience Test.**
116. **UNIX/LINUX Server Administration:** At least two (2) years of satisfactory, full-time experience in UNIX/LINUX in large scale data center operations support function. **To add Selective Certification for UNIX/LINUX Server Administration, enter "NIX" in Section D of the Education and Experience Test.**
117. **User Experience Design Management:** At least two (2) years of satisfactory, full-time experience working on software interaction design (also called user experience design or information architecture) and graphic/visual design using communication and visual design software (e.g.,

OmniGraffle, Visio, Adobe Creative Cloud, Microsoft Office, Apple productivity applications); front-end coding (e.g., HTML5, CSS3, JS, JQuery); and Agile and Waterfall software development methodologies. **To add Selective Certification for User Experience Design Management, enter "730" in Section D of the Education and Experience Test.**

118. **Video and Photo Editing Developer:** At least two (2) years of satisfactory, full-time experience in the design, development, implementation, maintenance and enhancement of video production and photo editing software. Examples of software include but are not limited to: Photoshop, Final Cut Pro X, Adobe Premiere, and Lightroom. **To add Selective Certification for Video and Photo Editing Developer, enter "74B" in Section D of the Education and Experience Test.**
119. **Virtualization Engineering:** At least five (5) years of satisfactory, full-time experience in virtualization technologies, including but not limited to: vSphere 4.x, 5.x & 6.x, vRA, vROPS, VCO, NSX, Converged Network Architectures, 10 GB, NFS and Cisco Nexus (1k,2k,5k,7k). **To add Selective Certification for Virtualization Engineering, enter "74C" in Section D of the Education and Experience Test.**
120. **Web Design:** At least two (2) years of satisfactory, full-time experience in web design, photo and graphics editing, user experience design, user interaction design, and information architecture design, one (1) year of which must have been experience in responsive web design, HTML5 and CSS3. **To add Selective Certification for Web Design, enter "WDE" in Section D of the Education and Experience Test.**

The above Selective Certification requirements may be met at anytime during the duration of the list. If you meet this requirement at some future date, please submit a request by mail to: DCAS Bureau of Examinations - Exam Development Group, 1 Centre Street, 14th Floor, New York, NY 10007. Please include the examination title and number, your social security number, and the Selective Certification you are requesting on your correspondence.

Application Receipt:

You will be emailed a receipt immediately after you have applied for the examination. If you do not receive this receipt, contact DCAS at OASys@dcas.nyc.gov. Include the last four digits of your social security number or the OASys confirmation number and the examination number and title in your email.

Promotion Test:

A promotion examination for this title is being held for eligible employees. The names appearing on the promotion list will be considered first in filling vacancies.

Concurrent Examination:

This examination is for New York City agencies and **not** for the City University of New York (CUNY). If you would like to apply for Computer Systems Manager in CUNY you **must** submit a separate application and fee for Exam. No. 9012 from October 3, 2018 through October 23, 2018.

PENALTY FOR MISREPRESENTATION:

Any intentional misrepresentation on the application or examination may result in disqualification, even after appointment, and may result in criminal prosecution.

The General Examination Regulations of the Department of Citywide Administrative Services (DCAS) apply to this examination and are part of this Notice of Examination. They are posted at nyc.gov/dcas and copies are available at the DCAS Computer-based Testing & Applications Centers.

The City of New York is an Equal Opportunity Employer.
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**For information about other exams, and your exam or list status, call 212-669-1357.
Internet: nyc.gov/dcas**