



COMMON CERTIFICATION PROGRAM



business computing

[biz-nis] [kubm-pyoo-ting]

The use and application of information technology for the support, enhancement, and enablement of an organization's business processes and strategies to meet the organization's vision and goals in an efficient and cost-effective manner.

COMMON CERTIFICATIONS



In today's competitive business environment it is more necessary than ever to effectively deliver technology in a way that makes the most efficient use of the limited resources available in any enterprise, large or small. In order to recognize individuals that have achieved the knowledge, skill and experience to do just that, COMMON developed the COMMON Certification Program. The program encompasses two different certifications, one that certifies an individual on their Business Computing skills and acumen, and one that certifies an individual's technical expertise in ILE RPG on Power on IBM i.

Achieving the full COMMON Certified Business Computing Professional (CCBCP) certification allows you to objectively show to current and future employers that you have the highly-desired combination of business acumen and technical skills to effectively deliver computing to their business. It starts by passing the COMMON Business Computing Associate (CBCA) exam, gaining some job experience, obtaining, or holding, a current technical certification, then sitting for the CCBCP exam. A passing score and confirmation of the other requirements will result in obtaining the full CCBCP certification.

The COMMON Certified Application Developer – ILE RPG adds a technical certification to the program, as demanded by the members of the COMMON community. This certification validates your RPG skills and expertise that a modern-day RPG programmer should possess by testing your knowledge and experience in four major topic areas.

The COMMON Certification Program and exams were developed by long-time COMMON members, members of the academic community and industry experts – those that have working knowledge and awareness of what skills and attributes a successful IT professional should possess. This program aims to measure and validate those skills through exams and other requirements, to independently validate your effectiveness in delivering computing to the business.

COMMON BUSINESS COMPUTING ASSOCIATE

CBCA is where the road to CCBCP starts. If you are a recent technology program graduate and have two years of experience, you are well on the way to being ready for the exam. A passing score signifies that COMMON attests to your professional competence, and to the knowledge and skills represented by defined tasks in the exam. As a CBCA certificate holder you will gain a distinct competitive advantage within your present organization, or, if your situation demands, the ever-growing crowd of job seekers. After earning your CBCA, you will be well on the way to the full CCBCP credential.



CBCA ELIGIBILITY

The following are recommended guidelines for candidates:

You are a recent college graduate from a two-year IT program, with at least two years of hands-on work experience in the Business Computing field.

- You are an under-graduate in the final year of a bachelor's degree program in IT, and have some exposure or hands-on work experience in the field.
- You are a non-degreed IT professionals with more than 2 years of work experience.

BENEFITS OF THE CBCA

For IT Professionals

- You have demonstrated a defined set of business computing knowledge and skills to current and future employers.
- You are recognized as an individual that has the combination of business acumen and technical expertise to contribute to the success of your company.

- You have demonstrated your commitment to the technology field and a well-defined level of professionalism.

For Students and Graduates

- You stand apart from other job candidates in an extremely competitive job market.
- You have showcased your initiative and a commitment to the field.
- You have demonstrated knowledge of the important technical and business skills that are vital in today's business computing environment.

For Employers

- You can rely on the CBCA credential as a way to bring the highest-level candidates for employment to the top of the list.
- You have an independent validation of the skills and competencies for your current staff.
- You have a tool to support and encourage professional development among your technology team.
- Your support for this certification program can differentiate when competing with other companies for the best and brightest talent.

THE BUSINESS COMPUTING ASSOCIATE EXAM

The CBCA exam tests not only your technology skills, but also your business and personal skills – key elements required of any IT professional in the twenty-first century. The test focuses on the nine important aspects of business computing detailed on the following pages.

Business Computing Terms and Concepts

- LAMP Stack
- Wintel
- IBM
- PTF, PMR, DASD
- Disaster Recovery
- Profit and Loss
- ERP
- Virtualization
- Service Level Agreement
- Quality Assurance

Business Processes

- General business application workflow
- Accounting / Budgeting
- Office / Productivity
- Regulations / Compliance
- SWOT Analysis
- Business Continuity
- Audit
- Change Management

End User Support and Tools

- Problem identification, determination, and resolution
- Managing user expectations
- Trouble ticket management
- End user tools (office productivity: docs, email etc.)
- General end user computing environment (workstation, thin client, Citrix, browser, etc.)
- Linux - Desktop
- MacOS
- Browsers
- Windows XP, Vista, 7, Etc.

Interpersonal Skills

- Strong speaking/writing skills
- Team Attitude
- Strong work ethic
- Understands and promotes Ethical and honest behavior
- Proper deportment
- Leadership Qualities
- Project Management / Participation

Networking / Telephony

- General Network Principles
- Physical cabling
- Routers, Switches, Firewalls
- Anti-Virus, Anti-Spam, Web content filtering
- Telephony
- Network Security (including VPN)
- Mobile phones

Operating Systems / Platforms / Environments

- IBM i (OS/400, i5/OS)
- Windows Server versions

- AIX
- Linux - Servers
- Comparison
- High Availability, Disaster Recovery, Save and Restore, Mirroring and RAID

Programming / Databases

- RPG / COBOL / CLLE / SQL(Language)
- .NET
- Java / C# / PHP / Ruby
- C++
- XML, DDS, SQL (Definition)
- Methodologies / Concepts / Analysis
- System Development Life Cycle
- Database - DB2 / MySQL / Oracle

Security and Regulatory

- Backup processing and retention
- Password Security
- HIPAA, SOX, PCI
- HTTPS, VPN

- Database access restrictions
- Storage Encryption
- High Availability
- Location of Data
- Balance of security vs Availability
- Physical Access restrictions
- Audit

Systems Hardware

- Power Systems
- Client PCs - Intel x86, Mac
- Servers x86
- Routers, switches, hubs
- A/C, Power, racks, and UPS
- Peripherals (Tapes, printers)
- Storage
- Slot Technology
- Memory

CBCA TESTING AND RECERTIFICATION

CBCA examinations are offered at selected events around the world. The test consists of 92 questions, is taken online, has a two-hour time limit and requires a score of 63% or higher to pass.

The fee for taking the test is:

- \$250 for COMMON members
- \$125 for Students
- \$300 for non-members

Once you have passed the test your credential will be in force for five years (starting on the passing date). The expectation is that you will, at some point in the five years, complete the balance of the requirements for full CCBCP certification so there are no recertification options other than retaking the exam.

COMMON BUSINESS COMPUTING PROFESSIONAL

If you have worked in the Business Computing field for at least five years, you are ready for the CCBCP exam. Over that time you will have developed a deep understanding of business and how IT relates to your company's business endeavor. You also will have achieved a high level of technical knowledge. If you want to confirm the proficiency of your IT knowledge, skills, and practices in a business environment, and would like to advance your career, achieving CCBCP will give you a significant edge over your peers.



CCBCP ELIGIBILITY

In addition to the recommended five years of work experience in the field, there are prerequisites for taking the CCBCP exam.

- You hold a current CBCA credential.
- You can provide proof of a current technical certification, as defined in the COMMON Certification Program guidelines.

BENEFITS OF THE CCBCP

For IT Professionals

- You have demonstrated your advanced business knowledge and technical skills to both current and future employers.
- You are recognized as someone that has a high level of business acumen, along with the technical expertise necessary for contributing to the success of the company.
- You have demonstrated your commitment to the professionalism of Business Computing.

For Employers

- You can rely on the CCBCP certification to determine who are the high-performing employees and what their value is to the organization.
- You have an independent validation of your staff's technical skills and business competency.
- You have a tool that supports and encourages the professional development of your IT staff.
- When asking for CCBCP in your search to hire and retain top employees, you have a key differentiator from other companies.

TECHNICAL CERTIFICATION

Holding a technical certification demonstrates your technical competence and is an integral part of the CCBCP certification.

Acceptable certifications should meet the following guidelines:

- The certification must be valid and current either at time when you sit for the CCBCP exam, or it must be achieved no later than 12 months from the date of passing the CCBCP exam.

- The certification must reflect technical Business Computing-related skills.
- The certification must be above an entry level certification from the certifying company or authority.
- Hardware or sales-related certifications do not qualify.

You may submit any other certification, degree, or other credential for consideration to the COMMON Certification Program Manager if you feel it qualifies, but does not fall under the general guidelines outlined above. The COMMON Certification Steering Committee will make the final decision on whether or not the credential is acceptable, and that decision is final.

Examples of Acceptable Technical Certifications

COMMON

- COMMON Certified Application Developer – ILE RPG

CompTIA

- Security+ , Server+, Linux+
- CDIA+, CTP+

Microsoft

- Microsoft Certified IT Professional and higher

IBM

- IBM Certified Professional (IBM CP) or higher

Linux Professional Institute

- LPIC-2 or higher

Examples of Non-Acceptable Certifications

CompTIA

- A+ , Network, PDI+, CTT+, Project+

Microsoft

- Microsoft Office Certifications – all levels

IBM

- IBM Certified Sales Specialist, IBM Certified Sales Expert
- IBM Certified Associate (IBM CA)

Linux Professional Institute

- LPIC-1

THE CERTIFIED BUSINESS COMPUTING PROFESSIONAL EXAM

Like the CBCA, the CCBCP exam tests your technology skills, business skills, and personal skills, but at a level that recognizes the experience you have gained in the field. The test focuses on the five key aspects detailed on the following pages.

Leadership

- Project planning, dependencies, risk assessment, progress tracking
- Project architectures
- Project scope and budget
- Team skill evaluation
- Managing change
- Business goals and objectives.
- Business planning
- Business culture

Finance

- Software, hardware, and service agreements
- Budgeting
- Business initiatives
- Analytics

- Cost modeling

Information Management

- Managing information assets.
- Best practices
- Systems and networking
- Documentation
- Business continuity

Dynamic Technology Management

- Adopting new technology
- Enterprise architectures
- Technology trends and directions
- Solution identification and development

Security and Regulatory Compliance

- Confidentiality and security
- Records management
- Legal discovery
- Government regulations and compliance
- Auditing
- Encryption

CCBCP TESTING AND RECERTIFICATION

CCBCP examinations are offered at selected events around the world. The test consists of 71 questions, is taken online, has a two-hour time limit and requires a score of 61% or higher to pass.

The fee for taking the test is:

- \$345 for COMMON members
- \$445 for non-members

Once you have passed the test your credential will be in force for four years (starting on the passing date). Recertification is automatic, provided you complete and submit documentation that you have completed at least the minimum requirements noted in the recertification guidelines section on the next pages.

CCBCP RECERTIFICATION GUIDELINES

What is Recertification?

The Business Computing industry is dynamic and is constantly changing and evolving. A CCBCP certificate holder has demonstrated knowledge at the point of time they took the examination. In order to stay current

in the industry, a certificate holder must be actively engaged in the profession, learn emerging technologies, and continue to enhance their skills throughout their career.

To assure that certificate holders are maintaining knowledge and skills that are state of the art in the Business Computing field, certificate holders must earn COMMON Education Credits (CECs).

The recertification process begins immediately upon achieving certification. A certificate holder must either:

1. Retake the CCBCP examination for US \$345 (member) or \$445 (nonmember) or;
2. Obtain and report a minimum of 30 CECs and pay a US \$200 (member) or \$300 (nonmember) recertification fee every four (4) years as long as the certificate holder continues the full-time practice of Business Computing.
3. Prove that they hold a current third-party technical certification at the time of recertification.

Failure to meet recertification requirements by the recertification deadline results in a loss of the CCBCP credential. To become certified again requires retesting.

Recertification Deadline

Recertification is required every four years on the anniversary of the date the certificate was originally issued. Original certification dates can be found on CCBCP issued correspondence, certificates, and credentials. For example, if you were originally certified on May 1, 2011, your recertification deadline is May 1, 2015.

Recertification Applications and fees must be postmarked 30 days prior to the certificate holder's recertification deadline, otherwise they will be assessed a \$100 late fee.

Tracking CECs

It is the responsibility of the certificate holder to properly record and document all activities during the four-year certification period that will be used to satisfy the CEC requirement. Incomplete or undocumented activities are not acceptable for reporting purposes.

Qualifying CEC activities are divided into seven (7) categories. To maintain a balance in recertification activities, some categories or activities have a maximum number of credits that can be reported in a recertification period. These caps are noted in the descriptions of the categories at www.common.org/certification.

The seven categories eligible for CECs are:

1. Education
2. Publishing
3. Presentations
4. Technical/Professional Service
5. Self Study
6. Employment
7. COMMON Certification Program Contribution

Obtaining Recertification

After receipt and review of the submitted recertification application, certificate holders are notified as to whether or not the submitted package satisfies the recertification requirements. If the recertification application is satisfactory, a certification credential update is issued to the certificate holder. If the application is found to be unacceptable, the entire package is returned to the certificate holder for further processing and resubmission. It is the certificate holder's responsibility to assure that all reprocessing is completed prior to the recertification deadline. Rejected recertification applications may be appealed to the COMMON Certification Committee.

Complete details about Recertification and Decertification can be found at www.common.org/certification

COMMON CERTIFIED APPLICATION DEVELOPER - ILE RPG

The newest credential offered through the COMMON Certification Program, the exam for the COMMON Certified Application Developer – ILE RPG addresses a demand within the COMMON community by providing an independent technical certification. Developed by COMMON members who are recognized industry experts in RPG, the exam validates a broad range of RPG and ILE technical skills by testing you in four major topic areas that a modern-day RPG programmer should know. The certification provides you with an independent confirmation of your modern RPG skills as determined through the exam objectives.



CERTIFIED APPLICATION DEVELOPER – ILE RPG RECOMMENDED PREREQUISITES

There are no formal requirements to take the exam, but the following prerequisites are recommended:

- 3 – 5 years experience performing a broad range of RPG design and programming activities
- Advanced knowledge of keywords and their functions.
- At least 18 months to 2 years of experience using ILE and /free format techniques

BENEFITS OF THE ILE RPG CERTIFICATION

For IT Professionals

- You have an independently validated credential that demonstrates your advanced RPG and ILE programming skills to both current and future employers.
- You are recognized as someone who has the programming skills that are needed to maintain and develop modern RPG applications

that contribute to the further success of your company.

- You have demonstrated your commitment to your profession by keeping your programming skillset up-to-date, and have actively pursued a validation of those skills.

For Employers

- You can rely on the Certified Application Developer - ILE RPG certification to determine if your employees have the current RPG programming skills necessary to maximize their value to the future of your organization.
- You have an independent validation of your staff's technical skills and competency to maintain and modernize your company's RPG applications.
- You have a tool that supports and encourages the professional development of your IT staff.
- Rely on the ILE RPG certification as an independent gauge of a potential employee's skill level when recruiting for new employees.

THE CERTIFIED APPLICATION DEVELOPER – ILE RPG EXAM

The exam objectives below, along with the certification description and prerequisites recommended for the exam, serve as an outline to help you decide if the exam is appropriate for you. To prepare for the certification exam, review the four main objectives below as a tool to help you understand the scope of the exam and the topic areas you may need to study. Each topic area in the exam covers a specific number of questions in the exam.

1. Core RPG, Subfiles, and Externally Described Files

- Use externally described database, display and printer files in a program
- Use EXTFILE.EXTMBR and OPEN/CLOSE operations in a program
- Create and maintain subfiles and programs that use those subfiles (DDS and RPG)
- Interpret subfile keywords (e.g., SFLCRRRN, SFLDSP, SFLDSPCTL, SFLDROP, SFLPAG, SFLFOLD, SFLRCNDR, SFLEND,SFLNXTCHG.)
- Recognize appropriate use of RPG creation commands (e.g., CRTxxxPGM, CRTxxxMOD, CRTPGM, CRTBNDxxx)
- Use basic array handling (e.g., *IN, LOOKUP, SORTA, MOVE, MOVEA, indexing)

- Code and use figurative constants (e.g., *LOVAL, *HIVAL, *ALL, *BLANKS, *ZEROS, *ON, *OFF)
- Code and use job date and system date
- Code and use structured operations codes (e.g., DO, DOU, DOW, IF/ELSE/ELSEIF, SELECT/WHEN, EXSR, FOR/ENDFOR)
- Code and use structured operations codes with expressions (+, -, *, /, **, <, >, =, (), and, or, not)
- Code and use date data types and arithmetic operations, including date operations in expressions
- Code and use RPG IV built-in functions
- Use H-Spec keywords
- Use RPG IV OpCodes (e.g., Arithmetic, Date, Message, Array, Declarative, File, Branching, String handling, Structured programming, compare, initialization, subroutine, data area)
- Code and use D-specs, including keywords

2. Advanced RPG & Problem Determination / Resolution

- Given an example of complex logical expression, determine its results
- Use data structure arrays
- Code complex D-specs (.eg. OVERLAY, coding fields without attributes, etc.)
- Use modern techniques to handle numbered indicators

- Declare and use subprocedures
- Use externally described data structures
- Write logic (including I/O operations) without numbered indicators
- Code and use /free format Calc specifications
- Translate operation codes not supported in /free form (e.g., MOVE, CALL, etc.) into /free form
- Use qualified data structures (e.g., LIKERECL, LIKEDS)
- Prototype program calls
- Determine appropriate use of passing parms by value versus by reference
- Enumerate advantages of Prototypes compared with PARM and PLIST
- Determine appropriate use for prototype keywords such as CONST, VALUE, and OPTIONS (*NOPASS,*OMIT,*VARSIZE)
- Use EVAL-CORR responding
- Debug RPG Programs
- Diagnose and eliminate errors for date data types and arithmetic overflow
- Code and use Monitor and %Error to handle runtime errors

3. RPG Data Handling

- Utilize embedded SQL in an RPG program (including /free form)
- Code and use I/O directly to/from Data Structures

- Determine multiple ways to use partial keys, including KLISTS, Key Data Structures, and direct specifications of key fields on I/O operations.
- Demonstrate how to convert character and numeric data fields containing date values into Date data types and vice versa
- String manipulation with %substring, %scan, %replace

4. ILE

- Explain, create and use Binding Directories
- Differentiate bound procedure calls from dynamic program calls
- Differentiate “bind by copy” from “bind by reference” and their appropriate uses
- Determine appropriate use of activation groups, including ILE and non-ILE
- Create and use Service Programs
- Determine the impact and appropriate use of the DFTACTGROUP (Default Activation Group) parameter on the CRTBNDRPG (Create Bound RPG) command
- Determine causes and ways to avoid Signature Violation errors when using Service Programs
- Determine the appropriate use of the scoping parameters for Override and Open commands such as OPNDBF and OPNQRYF

The COMMON Certification Program provides you with an independent source for validating your business skills and technical expertise through credentials and certifications.

Obtaining these credentials is a great way to showcase your expertise and value to your current and prospective employers, allowing you to stand apart from others and help you advance in your career. Since the exams were developed by experienced, working professionals, rest assured you will be tested on the skills needed by a technology professional in today's business environment. Take advantage of this opportunity to gain a credential and demonstrate your expertise.

Learn more at

www.common.org/certification



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