THE *Open* GROUP

Making standards work ™

The Open Group
IT Specialist
Certification Program

Version 1.0

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Boundaryless Information Flow™
achieved through global interoperability
in a secure, reliable, and timely manner

Executive Summary

The Open Group IT Specialist Certification (ITSC) program is based on an assessment of people skills, technical skills, and experience, not just tests of knowledge.

In today's global and highly competitive environment, businesses are striving for Boundaryless Information Flow™; therefore, they need to be flexible and able to quickly respond to changing market conditions irrespective of geographical boundaries, timezones, and organizational structures. Also, in order to achieve competitive advantage and to increase performance, organizations need to collaborate more than ever, supported by open and interoperable standards.

Vendor-independent, global, role-based ITSC brings the guarantee that other organizations in the business ecosystem acquire and possess similar, comparable capabilities; this is a prerequisite for any successful collaboration.

The Open Group ITSC program provides an element that is currently missing in the IT industry: a set of recognized standards that allow organizations to benchmark against the required skill level, experience, and knowledge, and select the right people for the job.

Introduction

A common characteristic of people-certification programs in the marketplace is that most test or validate the existence of relevant knowledge. Few reach beyond this. Clearly "book learning" is a critical first step to becoming effective at anything. But the effectiveness, potential, and the degree and value of contribution rise to a new level as relevant skills and experience are gained in a topical area. It is clearly important to "know" a subject, but it is more valuable to have applied that knowledge.

It is for this reason that The Open Group IT Specialist Certification (ITSC) program is based on an assessment of people skills, technical skills, and experience, not just tests of knowledge.

In today's global and highly competitive environment, businesses are striving for Boundaryless Information Flow™; therefore, they need to be flexible and able to quickly respond to changing market conditions irrespective of geographical boundaries, timezones, and organizational structures. Also, in order to achieve competitive advantage and to increase performance, organizations need to collaborate more than ever, supported by open and interoperable standards.

Although technological and semantic standards are crucial to support Boundaryless Information Flow, the key success factor for organizations to collaborate is still the quality of their individual employees. The success of an IT-enabled business highly depends on the proper abilities, experience, and skills of its IT Specialists, no matter in what part of the business solutions lifecycle they are involved (solution or product technical sales, construction, implementation, systems integration, and solution support) or in what context (technology, industry, business, or training).

The demand for competent, experienced IT Specialists will further increase, driven by a strong growth in business/IT projects across the world. This is particularly true now that more and more solutions and projects are sold and delivered in a global, distributed context, catalyzed by the growth in offshore IT resources and new, upcoming markets. Businesses need to staff their projects typically from multiple sources, both from within and outside the company, potentially from multiple continents and multiple providers. Businesses increasingly look to multiple vendors to provide products and solutions to address their business requirements. They find themselves more and more involved in collaborative engagements with partners, alliances, providers, clients, and even competitors.

To thrive in a context like this, it is paramount to have a global, standardized view of the skills, experience, and competences of IT Specialists. This will enable organizations to find and select the right resources to address their business needs, which is all the more relevant now that regulatory compliance and the ever-growing expectations of the market explicitly demand the highest quality of service.

Vendor-independent, global, role-based ITSC brings the guarantee that other organizations in the business ecosystem acquire and possess similar, comparable capabilities; this is a prerequisite for any successful collaboration.

From the point of view of the IT Specialist, certification against an open, global standard brings many benefits as well – it provides a clear, motivating path for career development and it contains portable credentials that will be recognized and accepted on a global scale. The

latter is crucial, as many IT Specialists find that today's working environment constantly creates new, often international opportunities. Certified IT Specialists will be part of a world-wide community of professionals that share the same background, values, and standards in their profession. The ITSC standard is explicitly profession-based: it focuses on the competences and experience that provide a much-needed higher dimension to the many limited, product-specific certifications that currently exist.

The Open Group ITSC program thus provides an element that is currently missing in the IT industry: a set of recognized standards that allow organizations to benchmark against the required skill level, experience, and knowledge, and select the right people for the job.

Proposal – High-Level Overview

The Open Group ITSC Conformance Model is derived from models used within IBM Corporation, Capgemini, and EDS, and draws from work done within The Open Group IT Architect Certification (ITAC) program. The Open Group member companies feel strongly that the program's Conformance Requirements will apply to the great majority of IT Specialists in the IT community. The program is based on best practices and is checked against the Skills Framework for the Information Age (SFIA) competency framework.

IT Specialists interface with clients in one of four ways, termed *Client Focus Areas*:

1. **Technical Services**: IT Specialists who primarily apply their technical skills in an internal or external customer services and implementation environment.

2. **Technical Sales**: IT Specialists who apply their technical skills to support the sale of vendor products, services, and solutions.

3. **Technical Support**: IT Specialists who apply their technical skills to support the operation and maintenance of vendor products, services, and solutions.

4. **Technical Training**: IT Specialists who primarily apply their technical skills to develop and deliver training courses.

IT Specialists focus on one Stream within one *Technical Focus Area*. The Technical Focus Areas are:

1. **Solution Development**: IT Specialists in this Technical Focus Area transform business and architecture requirements through analysis, design, development, test, and deployment into viable business solutions.

2. **Solution Delivery**: IT Specialists in this Technical Focus Area work with products or solutions based on any vendor hardware or software to ensure that the service provision meets business and architecture requirements.

IT Specialists in each Stream work in very diverse roles or specialties but are united by their deep technical expertise and the methods they use. To designate these different specialties, we use the term *Streams*. In many organizations, Streams are comparable to job codes or domains. In some Streams, we have defined *Sub-Streams*. This is purely for convenience in documentation. There is no difference from a certification perspective between a Stream and a Sub-Stream except that where Sub-Streams are defined, certification is only available to the Sub-Streams.

In addition to skills associated with Client Focus Areas and Technical Focus Areas, all certified IT Specialists must possess a common set of *Core Foundation Skills*. These skills cover **Personal**, **Business**, **Project Management**, and **Architecture** aspects and enable IT Specialists to work effectively with Architects, Business Consultants, and Project/Engagement Managers. These skills are needed in order to implement complex solutions or contribute to the sale of technically advanced products and solutions.

The Conformance Requirements for the ITSC program therefore consist of the following skill sets, as shown in Figure 1 below:

- Core Foundation Skills

- Client Focus Skills

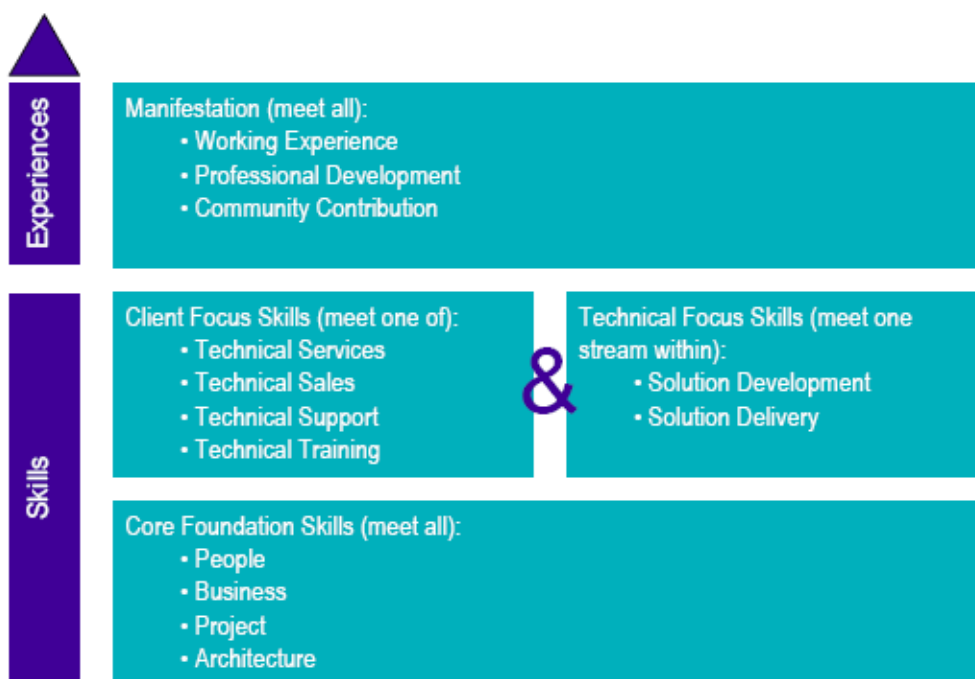- Technical Focus Skills

- Experience Requirements

Figure 1: Skill Sets of IT Specialist Certification

The Core Foundation Skills apply equally to all IT Specialists and therefore provide a foundation for flexibility and an opportunity for career change and personal development.

Fundamental to the ITSC program, certified IT Specialists must have demonstrated successful application of their skills in multiple projects or engagements.

IT Specialists are expected to be deployable in both client-facing and pure technical roles, and must be able to make the bridge between them. Both sets of skills are needed to transform client ideas and requirements into effective solutions. For these reasons, a certified IT Specialist must have both a Client Focus and a Technical Focus.

To be certified, an IT Specialist must have demonstrated substantial working experience within their Client and Technical Focus Areas and have repeatedly demonstrated their ability to make the bridge between the client-facing and technical aspects of a solution. As professionals, IT Specialists are expected to contribute to the community of IT Specialists and to continue to develop their professional skills and expertise.

Levels of Certification

The ITSC program recognizes two levels of certification – Level 1 "Certified" and Level 2 "Master Certified", in increasing order of skill and experience.

The primary difference between Level 1 and Level 2 is the impact and scope of the IT Specialist's contribution.

It is recommended that all professionals seeking ITSC certification have:

• Three (3) years' experience in the Stream in last five (5) years

• Five (5) years' work experience in IT in last eight (8) years

For guidance, it takes three to five years' additional IT experience to grow from Level 1 certification to Level 2 certification.

Certification Level	Experience
Level 1 – Certified	Level 1 Certified IT Specialists are required to have led technical aspects of projects or engagements within their chosen Stream and be able to work without supervision. Level 1 Certified IT Specialists must have acted in the role of IT Specialist within their Stream in at least two (2) successful engagements. The deliverables produced by the candidate must have contributed to the engagement meeting its acceptance criteria.
Level 2 – Master Certified	Level 2 Master Certified IT Specialists are recognized experts who have mastered the state-of-the-art in their field. Level 2 Master Certified IT Specialists: – Lead teams involving multiple Streams on projects or engagements – Make significant contributions to project definition and management – Are involved in the growth and development of others Level 2 Master Certified IT Specialists must have acted in a leadership role in at least three (3) successful engagements.

Who are IT Specialists?

IT Specialists support solution construction, implementation, and systems integration. IT Specialists are proficient in a Client Focus Area and Technical Focus Area. They are capable of working with requirements and designs to ensure successful implementation of production projects and engagements.

In the lifecycle of a project or engagement, IT Specialists are primarily involved in the design, construction, and implementation phases. IT Specialists may also be involved in the

architecture phase of the project or engagement and sometimes contribute to the Vision/Strategy phase.
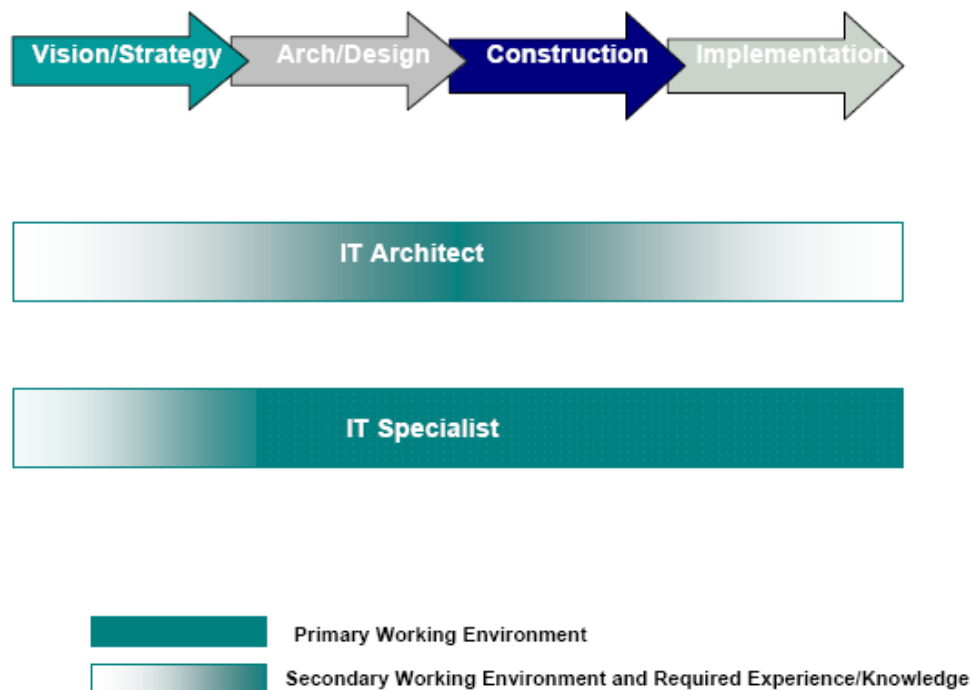

Figure 2: Positioning of IT Specialists

Description of IT Specialist Depth and Breadth

The ITSC program validates certification candidate skills across four major dimensions: Client Focus, Technical Focus, People/Business, and Project Management/Architecture. The certification program ensures that the candidate not only possesses deep technical skills, but also personal and business skills that are deemed important in today's business climate, and project management and architecture skills to the extent they can work with Project Managers and their deliverables as well as IT Architects and their deliverables.

As the IT Specialist gains the required skills and experiences in each dimension, the IT Specialist outwardly expands the depth and breadth of skills required for certification. Figure 3 depicts this process.
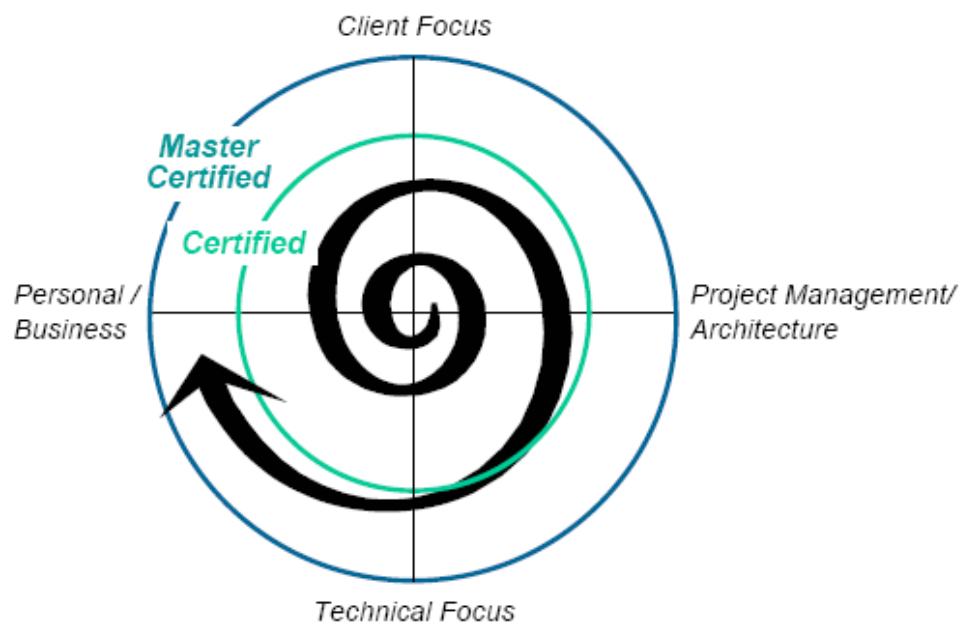
Figure 3: IT Specialists have to Develop themselves in each Dimension

Structure of the Conformance Requirements

The ITSC program will make certification available to skilled and experienced IT Specialists in a Client Focus Area, and a number of Streams within Technical Focus Areas. The Client Focus Areas, Technical Focus Areas, and Streams currently envisaged are described below.

In addition to the Stream and Focus Area-specific skills and experience requirements, the program will define a number of generic skill and experience requirements in areas such as People, Business, Project Management, and Architecture skills, and will also include requirements for Working Experience, Community Contribution, and ongoing Professional Development activities.

Core Foundation Skills

The proposed IT Specialist Core Foundation Skills map closely with the existing ITAC-defined Core Foundation Skills, but with a different emphasis to reflect the different professions.

The ITSC Core Foundation Skills are categorized into Business, People, Project Management, and Architecture skills. IT Specialists need IT Architecture skills to the extent that they can work with IT Architects and their deliverables.

The candidate must be able to document that they have demonstrated these skills at the required level (or higher) repeatedly and successfully.

Client Focus Areas

IT Specialists are deployed in four broad Client Focus Areas across company organizations worldwide. IT Specialist Client Focus Areas are: Technical Services, Technical Sales, Technical Support, and Technical Training.

Technical Services

IT Specialists in this Client Focus Area primarily apply their technical skills in an internal or external customer billable services and implementation environment.

Technical Sales

IT Specialists in this Client Focus Area primarily apply their technical skills to support the sales of vendor products, services, and solutions. Individuals who are part of technical sales typically have responsibility for non-billable activities, such as driving revenue through in-depth, complex demonstrations, technical evaluations, or proof-of-concepts.

Technical Support

IT Specialists in this Client Focus Area primarily apply their technical skills to support the operation and maintenance of vendor products, services, and solutions. Individuals who are part of technical support typically have responsibility for sizing, troubleshooting, and critical customer situations.

Technical Training

IT Specialists in this Client Focus Area primarily apply their technical skills to develop and deliver training courses. The professionals in this area combine assignments in client projects with the delivering of training courses to clients.

Technical Focus Areas

An IT Specialist will focus on one of two Technical Focus Areas: **Solution Development** and **Solution Delivery**. Each of these Technical Focus Areas has multiple Stream areas in which a perspective certification candidate can apply.

Solution Development

IT Specialists in this Technical Focus Area transform business requirements and architecture requirements through analysis, design, development, test, and deployment into viable business solutions. These solutions include people, process, and technology to solve business problems. The Solution Development Technical Focus Area consists of the following Streams:

- **Business Analysis**: IT Specialists in this Stream will have expertise in the description and analysis of business processes, and their translation into functional and non-functional IT requirements. Business Analysts act as the interpreters between the worlds of IT and business. Typical examples of the deliverables are functional and non-functional requirements, use-cases, process models, and impact analyses.

- **Application Development**: IT Specialists in this Stream will have expertise in translating IT requirements in the design, development, and assembly of components to create custom information systems. Typical examples of the deliverables are functional and technical

designs, models, components, code, unit tests, and documentation.

- **Packaged Application Implementation**: IT Specialists in this Stream will have expertise in implementing, integrating, and customizing commercial ISV packages such as CRM, ERP, Finance, Accounting, or vertical industry-specific packages. The Packaged Application Implementation IT Specialist is characterized by the combination of general development knowledge with package knowledge and the specific domain to which the package relates. Typical examples of the deliverables are functional and technical designs, models, components, code, parameters, unit tests, and documentation.

- **Business Information Management**: IT Specialists in this Stream will have expertise in making available, integrating, and optimizing structured and/or unstructured data to present or distribute information for use and analysis by the business. Sub-streams in this Stream are **Business Intelligence**, **Data Integration**, and **Content Integration**. Typical examples of the deliverables are strategy maps, information models (logical, physical, dimensional, etc.), data warehouses, balanced scorecards, and reports.

- **Infrastructure Design**: IT Specialists in this Stream will have expertise in selecting the optimal combination of storage systems, networking systems, servers, and/or printing systems based on application and business information requirements. Typical examples of the deliverables are capacity plans, standardization plans, migration plans, and infrastructure models.

- **Testing**: IT Specialists in this Stream will have expertise in the planning, design, management, execution, and reporting of tests using appropriate testing tools and techniques, and conforming to agreed standards, to ensure that new and amended systems, together with any interfaces, perform as specified together with the business. Typical examples of the deliverables are testing strategies, test plans, test cases, test reports, and quality metrics.

Solution Delivery

IT Specialists in this Technical Focus Area transform business requirements and architecture requirements into viable business solutions. These solutions include people, process, and technology to solve business problems. The Solution Delivery Technical Focus Area consists of the following Streams:

- **Infrastructure and Applications Management**: IT Specialists in this Stream will have expertise in managing and operation of IT hardware, software, communications, and/or application solutions, and the resources required to plan for, develop, deliver, and support properly engineered IT services and products to meet the needs of a business. The scope of this Stream includes preparation for new or changed services, management of the change process, and maintenance of regulatory, legal, and professional standards, management of performance of systems and services in relation to their contribution to business performance, and management of bought-in services including, for example, public network, virtual private network, and outsourced services. Typical examples of the deliverables are service-level reporting, risk, and contingency planning.

- **Systems and Hardware Products**: IT Specialists in this Stream work with products or solutions based on any vendor hardware and/or any vendor operating system software. The Systems and Hardware Products Stream is comprised of four Sub-Streams:

○ **Storage Systems**: IT Specialists in this Stream will have expertise in one or more storage system technology areas. Examples include: disk, tape, optical, SAN, NAS, or storage software related to these technologies.

○ **Networking Systems:** IT Specialists in this Stream will have expertise in one or more networking system technology areas. Examples include: routers, networking controllers, bridges, or networking software related to these technologies.

○ **Server**: IT Specialists in this Stream will have expertise in one or more server technologies. Examples include: IBM system processors, IBM operating systems, or Sun UltraSparc servers.

○ **Cross-Systems**: IT Specialists in this Stream will have expertise in two or more servers, their operating system environments and/or storage technologies, and their interrelationship and operation.

• **Software**: IT Specialists in this Stream work with products or solutions based on any vendor software or open source software products. Software products fall under five Sub-Streams:

○ **Application Development Products**: IT Specialists in this Stream will have expertise in one or more application development-based software product areas. Examples include: IBM Rational Suite, Microsoft .Net, and Sun Development Software.

○ **Application and Integration Middleware**: IT Specialists in this Stream will have expertise in one or more application and integration middleware-based software product areas. Examples include: IBM WebSphere application server or message broker technology, Microsoft Message Queue, and Sun SeeBeyond integration products.

○ **Data Management**: IT Specialists in this Stream will have expertise in one or more relational and non-relational data management-based software product areas. Examples include: IBM DB2 and IMS/DB, and Oracle Database 10g.

○ **Content Management**: IT Specialists in this Stream will have expertise in one or more areas of content management software. Content management software captures, stores, manages, integrates, and delivers all forms of digital content across a company's entire value chain to create real business value. Content management systems and integrated processes provide the unified approach for managing multiple content types. Examples include: IBM Content Manager and Interwoven Content Suite.

○ **Portal and Collaboration**: IT Specialists in this Stream will have expertise in one or more areas of portal and collaboration software. Examples include: IBM WebSphere Portal, IBM Lotus Notes, and Microsoft Exchange.

Future Directions

Due to the depth and breadth of the IT Specialist community, we realize some specialties may have been omitted from this first version of the program. It is our intent to continually review

the extent and relevance of the ITSC program and to update and evolve it according to the needs of the community it is intended to serve.

Process Overview

Modelled on The Open Group ITAC program, there will be two different routes to IT Specialist certification:

• The first route is *direct* certification by The Open Group.

• The second route is *indirect*, by an accredited certification partner.

The Conformance Requirements for IT Specialist certification apply equally to the direct and indirect routes to certification.

Beyond the Conformance Requirements for a Certified IT Specialist, third parties operating Accredited Certification Programs (ACPs) may levy additional requirements on their candidates in order to satisfy their internal skills requirements. Such additional requirements are called *extended certification requirements* or simply *extended requirements*. For example, extended certification requirements might include experience with a proprietary corporate method or specific industry or cultural requirements.

The program requires ACPs' extended certification requirements to be effectively documented and communicated within the accredited program. In addition, extended certification requirements must not relax the skills, experience, or process requirements of the program.

About The Open Group

The Open Group is a vendor-neutral and technology-neutral consortium, whose vision of Boundaryless Information Flow™ will enable access to integrated information within and between enterprises based on open standards and global interoperability. The Open Group works with customers, suppliers, consortia, and other standards bodies. Its role is to capture, understand, and address current and emerging requirements, establish policies, and share best practices; to facilitate interoperability, develop consensus, and evolve and integrate specifications and Open Source technologies; to offer a comprehensive set of services to enhance the operational efficiency of consortia; and to operate the industry's premier certification service. Further information on The Open Group can be found at www.opengroup.org.