

TOGAF® 9 Foundation Study Guide

Preparation for the TOGAF 9 Part 1 Examination

3rd Edition



Rachel Harrison

TOGAF® 9 Foundation
Study Guide 3rd Edition

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TOGAF® 9

Foundation

Study Guide

3rd Edition

Preparation for the TOGAF 9 Part 1 Examination

Prepared by Rachel Harrison of Oxford Brookes University



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Preface

This Document

This document is a Study Guide for TOGAF® 9 Foundation. It is based on Version 2 of the TOGAF Certification for People Conformance Requirements and is aligned to TOGAF Version 9.1. This third edition contains minor updates to remove references to the TOGAF 8-9 Advanced Bridge Examination¹ and also adds a second Test Yourself Examination paper to Appendix B.

It gives an overview of every learning objective for the TOGAF 9 Foundation Syllabus and in-depth coverage on preparing and taking the TOGAF 9 Part 1 Examination. It is specifically designed to help individuals prepare for certification.

The audience for this Study Guide is:

- Individuals who require a basic understanding of TOGAF 9
- Professionals who are working in roles associated with an architecture project such as those responsible for planning, execution, development, delivery, and operation
- Architects who are looking for a first introduction to TOGAF 9
- Architects who want to achieve Level 2 certification in a stepwise manner

A prior knowledge of enterprise architecture is advantageous but not required. While reading this Study Guide, the reader should also refer to the TOGAF 9 documentation² available online at www.opengroup.org/architecture/togaf9-doc/arch and also available in book form.

The Study Guide is structured as shown below. The order of topics corresponds to the learning units of the TOGAF 9 Foundation Syllabus (see Appendix D).

- Chapter 1 (Introduction) provides a brief introduction to TOGAF certification and the TOGAF 9 Part 1 Examination that leads to TOGAF 9 Foundation, as well as how to use this Study Guide.

¹ The TOGAF 8-9 Advanced Bridge Examination was withdrawn on November 1, 2013.

² TOGAF Version 9.1 (ISBN is 978 90 8753 679 4 G116), available at www.opengroup.org/bookstore/catalog/g116.htm.

- Chapter 2 (Basic Concepts) introduces the basic concepts of enterprise architecture and the TOGAF standard. This provides a high-level view of the TOGAF framework, enterprise architecture, architecture frameworks, and the contents of the TOGAF standard.
- Chapter 3 (Core Concepts) describes the core concepts of TOGAF 9.
- Chapter 4 (Key Terminology) introduces the key terminology of TOGAF 9.
- Chapter 5 (Introduction to the ADM) introduces the Architecture Development Method (ADM), the objectives of each phase of the ADM, and how to adapt and scope the ADM for use.
- Chapter 6 (The Enterprise Continuum and Tools) describes the Enterprise Continuum and tools; its purpose, and its constituent parts.
- Chapter 7 (The ADM Phases) describes how each of the ADM phases contributes to the success of enterprise architecture.
- Chapter 8 (ADM Guidelines and Techniques) describes guidelines and techniques provided to support application of the ADM.
- Chapter 9 (Architecture Governance) describes Architecture Governance.
- Chapter 10 (Views, Viewpoints, and Stakeholders) introduces the concepts of views and viewpoints and their role in communicating with stakeholders.
- Chapter 11 (Building Blocks) introduces the concept of building blocks.
- Chapter 12 (ADM Deliverables) describes the key deliverables of the ADM cycle and their purpose.
- Chapter 13 (TOGAF Reference Models) describes the TOGAF reference models, including the Technical Reference Model (TRM) and the Integrated Information Infrastructure Reference Model (III-RM).
- Appendix A (Answers to Test Yourself Questions) provides the answers to the Test Yourself sections provided at the end of each chapter.
- Appendix B (Test Yourself Examination Papers) provides two Test Yourself examinations to allow you to assess your knowledge of the TOGAF 9 Foundation Syllabus and readiness to take the TOGAF 9 Part 1 Examination.
- Appendix C (Test Yourself Examination Paper Answers) provides the answers to the examinations in Appendix B.
- Appendix D (TOGAF 9 Foundation Syllabus) provides the TOGAF 9 Foundation Syllabus.

How to Use this Study Guide

The chapters in this Study Guide are arranged to follow the organization of the TOGAF 9 Foundation Syllabus (see Appendix D) and should be read in order. However, you may wish to use this Study Guide during review of topics with which you are already familiar, and it is certainly possible to select topics for review in any order. Where a topic requires further information from a later part in the syllabus, a cross-reference is provided.

Within each chapter are “Key Learning Points” and “Summary” sections that help you to easily identify what you need to know for each topic.

Each chapter has a “Test Yourself” questions section that will help you to test your understanding of the chapter and prepare for the TOGAF 9 Part 1 Examination. The purpose of this is to reinforce key learning points in the chapter. These are multiple-choice format questions where you must identify one correct answer.

Each chapter also has a “Recommended Reading” section that indicates the relevant sections in the TOGAF 9 documentation that can be read to obtain a further understanding of the subject material.

Finally, at the end of this Study Guide are two “Test Yourself” examination papers that you can use to test your readiness to take the official TOGAF 9 Part 1 Examination. These papers are designed to include the same question formats and a similar difficulty level to the official TOGAF 9 Part 1 Examination.

Conventions Used in this Study Guide

The following conventions are used throughout this Study Guide in order to help identify important information and avoid confusion over the intended meaning.

- **Ellipsis (...)**

Indicates a continuation; such as an incomplete list of example items, or a continuation from preceding text.

- **Bold**

Used to highlight specific terms.

- ***Italics***

Used for emphasis. May also refer to other external documents.

- *(Syllabus reference: Unit X, Learning Outcome Y: Statement)*
Used at the start of a text block to identify the TOGAF 9 Foundation Syllabus learning outcome.

In addition to typographical conventions, the following conventions are used to highlight segments of text:



A Note box is used to highlight useful or interesting information.



A Tip box is used to provide key information that can save you time or that may not be entirely obvious.

About the TOGAF standard

TOGAF®, an Open Group Standard, is a proven enterprise architecture methodology and framework used by the world's leading organizations to improve business efficiency. It is the most prominent and reliable enterprise architecture standard, ensuring consistent standards, methods, and communication among enterprise architecture professionals. Enterprise architecture professionals fluent in TOGAF standards enjoy greater industry credibility, job effectiveness, and career opportunities. The TOGAF standard helps practitioners avoid being locked into proprietary methods, utilize resources more efficiently and effectively, and realize a greater return on investment.

About The Open Group

The Open Group is a global consortium that enables the achievement of business objectives through IT standards. With more than 400 member organizations, The Open Group has a diverse membership that spans all sectors of the IT community – customers, systems and solutions suppliers, tool vendors, integrators, and consultants, as well as academics and researchers – to:

- Capture, understand, and address current and emerging requirements, and establish policies and share best practices

- Facilitate interoperability, develop consensus, and evolve and integrate specifications and open source technologies
- Offer a comprehensive set of services to enhance the operational efficiency of consortia
- Operate the industry's premier certification service

Further information on The Open Group is available at www.opengroup.org. The Open Group publishes a wide range of technical documentation, most of which is focused on development of Open Group Standards and Guides, but which also includes white papers, technical studies, certification and testing documentation, and business titles. Full details and a catalog are available at www.opengroup.org/bookstore.

Readers should note that updates – in the form of Corrigenda – may apply to any publication. This information is published at www.opengroup.org/corrigenda.

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References

The following documents are referenced in this Study Guide:

- TOGAF Version 9.1, available online at www.opengroup.org/architecture/togaf9-doc/arch, and also available as TOGAF Version 9.1 “The Book” (ISBN: 978 90 8753 6794) at www.opengroup.org/bookstore/catalog/g116.htm.
- Why Does Enterprise Architecture Matter?, White Paper by Simon Townson, SAP, November 2008 (W076), published by The Open Group (www.opengroup.org/bookstore/catalog/w076.htm).
- Interoperable Enterprise Business Scenario, October 2002 (K022), published by The Open Group (www.opengroup.org/bookstore/catalog/k022.htm)
- ISO/IEC 42010:2007, Systems and Software Engineering – Recommended Practice for Architectural Description of Software-Intensive Systems, Edition 1 (technically identical to ANSI/IEEE Std 1471-2000).
- TOGAF Certification for People: Program Summary Datasheet, 2013, published by The Open Group (www.opengroup.org/togaf9/cert/docs/togaf9_cert_summary.pdf).
- TOGAF 9 Foundation Datasheet, 2013, published by The Open Group (www.opengroup.org/togaf9/cert/docs/togaf9_foundation.pdf).
- TOGAF Certification for People: Certification Policy, February 2009 (X091), published by The Open Group (www.opengroup.org/bookstore/catalog/x091.htm).
- TOGAF Certification for People: Conformance Requirements (Multi-Level), Version 2, December 2011 (X111), published by The Open Group (www.opengroup.org/bookstore/catalog/x111.htm).
- The Clinger-Cohen Act (US Information Technology Management Reform Act 1996). The Sarbanes-Oxley Act (US Public Company Accounting Reform and Investor Protection Act 2002).
- EU Directives on the Award of Public Contracts
- Bill Estrem, “TOGAF to the Rescue” (www.opengroup.org/downloads)

The following web links are referenced in this Study Guide:

- The Open Group TOGAF 9 Certification web site: www.opengroup.org/togaf9/cert
- The TOGAF information web site: www.togaf.info

Chapter 1

Introduction

1.1 Key Learning Points

This document is a Study Guide for TOGAF® Version 9 for students planning to become certified for TOGAF 9 Foundation. It will familiarize you with all the topics that you need to know in order to pass the TOGAF 9 Part 1 Examination.

It gives an overview of every learning objective for the TOGAF 9 Foundation Syllabus and in-depth coverage on preparing and taking the TOGAF 9 Part 1 Examination. It is specifically designed to help individuals prepare for certification.

This first chapter will familiarize you with the TOGAF 9 certification program and its principles, as well as give you important information about the structure of the TOGAF 9 Part 1 Examination.

The objectives of this chapter are as follows:

- To provide an understanding of TOGAF certification and why you should become certified
- To learn key facts about the TOGAF 9 Part 1 Examination

1.2 The TOGAF Certification for People Program

(Syllabus Reference: Unit 13, Learning Outcome 1: You should be able to briefly explain the TOGAF certification program, and distinguish between the levels for certification.)

Certification is available to individuals who wish to demonstrate they have attained the required knowledge and understanding of TOGAF Version 9.³

³ This edition of this Study Guide covers Version 2 of the TOGAF Certification for People Conformance Requirements, which are aligned to TOGAF Version 9.1.

There are two levels defined for TOGAF 9 People certification, denoted Level 1 and Level 2, which lead to certification at TOGAF 9 Foundation and TOGAF 9 Certified, respectively. This Study Guide covers the first of these – TOGAF 9 Foundation. Studying for TOGAF 9 Foundation can be used as a learning objective towards achieving TOGAF 9 Certified, as the learning outcomes in TOGAF 9 Foundation are also required in TOGAF 9 Certified.

Table 1: Certification Levels and Associated Labels

Certification Level	Certification Label
Level 1	TOGAF 9 Foundation
Level 2	TOGAF 9 Certified



Why is TOGAF certification important?

The existence of a certification program for the TOGAF standard provides a strong incentive for organizations to standardize on the TOGAF standard as the open method for enterprise architecture, and so avoid lock-in to proprietary methods. It is an important step in making enterprise architecture a well-recognized discipline, and in introducing rigor into the procurement of tools and services for enterprise architecture.

The two certification levels are summarized in Figure 1 and Figure 2. Figure 1 shows the relationship between Level 1 and Level 2. Level 2 (TOGAF 9 Certified) is a superset of the requirements for Level 1 (TOGAF 9 Foundation).⁴

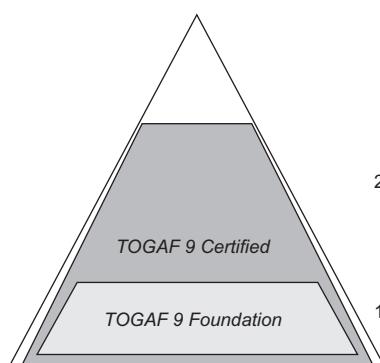


Figure 1: TOGAF 9 Certification Program Overview

⁴ The gap at the top of the pyramid is to signify that additional certification levels may be added in the future.

1.2.1 Certification Document Structure

The documents available to support the program are as shown in Figure 2.

Program description documents, such as this Study Guide, are intended for an end-user audience including those interested in becoming certified. The Program definition documents are intended for trainers, examination developers, and the Certification Authority. All these documents are available from The Open Group web site.⁵

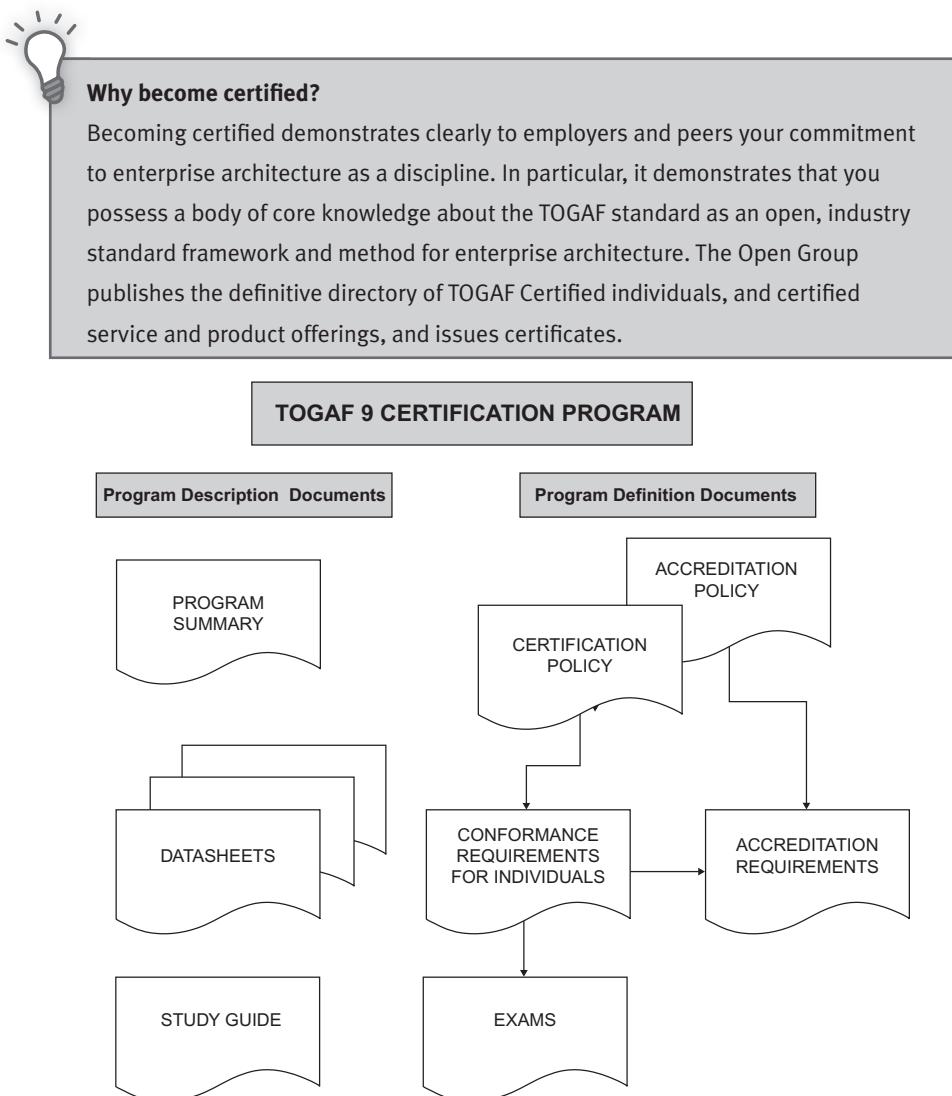


Figure 2: Certification Document Structure

⁵ Available from the TOGAF 9 Certification website at www.opengroup.org/togaf9/cert, or from The Open Group Bookstore at www.opengroup.org/bookstore.

1.2.2 Program Vision and Principles

The vision for the program is to define and promote a market-driven education and certification program to support TOGAF 9. The program has been designed with the following principles in mind:

Table 2: TOGAF Certification Principles

Principle	Certification Aspects
Openness	The program is open to applicants from all countries.
Fairness	Certification is achieved only by passing an examination that is equivalent to that taken by any other candidate.
Market Relevance	The program is structured to meet the needs of the market for conversion from TOGAF 8, as well as for people without prior TOGAF certification, and for certification at two levels. Additional levels may be introduced during the life of the program, as may updated versions of the TOGAF standard.
Learning Support	Training courses are provided by third parties, according to the needs of the market.
Quality	Training course providers may choose to seek Open Group accreditation for their courses. Accredited courses are listed on The Open Group web site.
Best Practice	The program is designed to follow industry best practice for equivalent certification programs.

1.2.3 TOGAF 9 Foundation

The purpose of certification to TOGAF 9 Level 1, known as TOGAF 9 Foundation, is to provide validation that the candidate has gained an acceptable level of knowledge of the terminology, structure, and basic concepts of TOGAF 9, and understands the core principles of enterprise architecture and the TOGAF standard.

The learning objectives at this level focus on knowledge and comprehension.

Individuals certified at this level will have demonstrated their understanding of:

- The basic concepts of enterprise architecture and the TOGAF standard
- The core concepts of TOGAF 9
- The key terminology of TOGAF 9
- The ADM cycle and the objectives of each phase, and how to adapt and scope the ADM
- The concept of the Enterprise Continuum; its purpose, and its constituent parts
- How each of the ADM phases contributes to the success of enterprise architecture
- The ADM guidelines and techniques
- How Architecture Governance contributes to the Architecture Development Cycle
- The concepts of views and viewpoints and their role in communicating with stakeholders
- The concept of building blocks
- The key deliverables of the ADM cycle
- The TOGAF reference models
- The TOGAF certification program

Examination

Certification for TOGAF 9 Foundation is achieved by passing the TOGAF 9 Part 1 Examination. This is a multiple-choice examination with 40 questions.⁶



What is the relationship between TOGAF 9 Foundation and TOGAF 9 Certified?

The learning outcomes for TOGAF 9 Foundation are a subset of those for TOGAF 9 Certified. Candidates are able to choose whether they wish to become certified in a stepwise manner by starting with TOGAF 9 Foundation and then at a later date TOGAF 9 Certified, or alternately to go direct to TOGAF 9 Certified by taking the combined examination.

⁶ For the latest information on examinations, see the TOGAF 9 Certification web site at www.opengroup.org/togaf9/cert.

1.2.4 The Certification Process

This Study Guide is aimed at preparing you to become certified for TOGAF 9 Foundation. The examination for this level is the TOGAF 9 Part 1 Examination, which comprises 40 multiple-choice questions.

The TOGAF 9 Foundation Syllabus for the examination is contained in Appendix D. Certain topic areas are weighted as more important than others and thus have more questions. The 11 topic areas covered by the examination together with the number of questions per area in the examination follows:

1. Basic Concepts (3 questions)
2. Core Concepts (3 questions)
3. Introduction to the ADM (3 questions)
4. The Enterprise Continuum and Tools (4 questions)
5. ADM Phases (9 questions)
6. ADM Guidelines and Techniques (6 questions)
7. Architecture Governance (4 questions)
8. Architecture Views, Viewpoints, and Stakeholders (2 questions)
9. Building Blocks (2 questions)
10. ADM Deliverables (2 questions)
11. TOGAF Reference Models (2 questions)

1.2.4.1 Format of the Examination Questions

The examination questions are multiple-choice questions. These are very similar in format to the Test Yourself questions included in each chapter. Note that the exact format for display is test center-specific and will be made clear on the screens when taking the examination.



Exam Tip

Please read each question carefully before reading the answer options. Be aware that some questions may seem to have more than one right answer, but you are to look for the one that makes the most sense and is the most correct.

1.2.4.2 What do I need to bring with me to take the Examination?

You should consult with the test center regarding the forms of picture ID you are required to bring with you to verify your identification.

1.2.4.3 Can I refer to materials while I take the Examination?

No; it is a closed-book examination.

1.2.4.4 If I fail, how soon can I retake the Examination?

You should consult the current policy on The Open Group web site. At the time of writing, the policy states that individuals who have failed the examination are not allowed to retake the examination within one (1) month of the first sitting.

1.2.5 Preparing for the Examination

You can prepare for the examination by working through this Study Guide section-by-section. A mapping of the sections of this Study Guide to the TOGAF 9 Foundation Syllabus is given in Appendix D. After completing each section, you should answer the Test Yourself questions and read the referenced sections from the TOGAF documentation. Once you have completed all the sections in this Study Guide, you can then attempt the Test Yourself examination papers in Appendix B. These are designed to give a thorough test of your knowledge. If you have completed all the prescribed preparation and can attain a pass mark for the Test Yourself examination papers as described in Appendix B, then it is likely you are ready to sit the examination.

1.3 Summary

The TOGAF 9 People certification program is a knowledge-based certification program. It has two levels, Level 1 and Level 2, which lead to certification for TOGAF 9 Foundation and TOGAF 9 Certified, respectively.

The topic for this Study Guide is preparation for taking the TOGAF 9 Part 1 Examination that leads to the TOGAF 9 Foundation certification. The examination comprises 40 simple multiple-choice questions to be completed in one hour.⁷

Preparing for the examination includes the following steps:

- You should work through this Study Guide step-by-step.

⁷ Additional time is allowed for candidates for whom English is a second language where the examination is not available in the local language. For further information see the advice to candidates sheet on The Open Group TOGAF 9 Certification web site.

- At the end of each chapter, you should complete the Test Yourself questions and read the sections of the TOGAF documentation listed under Recommended Reading.
- Once you have completed all the chapters in this Study Guide, you should attempt the Test Yourself examination papers given in Appendix B.
- If you can attain the target score in Appendix C, then you have completed your preparation.

1.4 Test Yourself Questions

- Q1: How many certification levels are there in the TOGAF 9 People certification program?
- 1
 - 2
 - 3
 - 4
- Q2: Which one of the following is the entry level certification for an individual?
- TOGAF 9 Certified
 - TOGAF 9 Foundation
 - TOGAF 9 Professional
 - TOGAF 9 Architect
- Q3: Which one of the following describes three principles of the TOGAF 9 People certification program?
- Integrity, Scalability, Flexibility
 - Objectivity, Robustness, Simplicity
 - Openness, Fairness, Quality
 - Knowledge-based, Valuable, Simplicity
 - All of these
- Q4: Which of the following topic areas is not included in the TOGAF 9 Foundation Syllabus?
- Architecture Governance
 - Basic Concepts
 - Building Blocks
 - Guidelines for adapting the ADM: Iteration and Levels
 - Introduction to the ADM

- Q5: All of the following apply to the TOGAF 9 Part 1 Examination, except which statement?
- Candidates who fail cannot take the examination again within one (1) month.
 - The examination consists of more than 100 questions.
 - The examination has multiple-choice format questions.
 - It is a closed-book examination.

1.5 Recommended Reading

The following are recommended sources of further information for this chapter:

- TOGAF Certification for People: Program Summary Datasheet, 2013, published by The Open Group (www.opengroup.org/togaf9/cert/docs/togaf9_cert_summary.pdf)
- TOGAF 9 Foundation Datasheet, 2013, published by The Open Group (www.opengroup.org/togaf9/cert/docs/togaf9_foundation.pdf)
- TOGAF Certification for People: Certification Policy, February 2009 (X091), published by The Open Group (www.opengroup.org/bookstore/catalog/x091.htm)
- TOGAF Certification for People: Conformance Requirements (Multi-Level), December 2011 (X111), published by The Open Group (www.opengroup.org/bookstore/catalog/x111.htm)
- The Open Group TOGAF 9 Certification web site: www.opengroup.org/togaf9/cert
- The TOGAF information web site: www.togaf.info