

# TOGAF™ Version 8.1.1 Enterprise Edition

## A Pocket Guide



TOGAF™ VERSION 8.1.1 ENTERPRISE EDITION  
A POCKET GUIDE

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# TOGAF™ Version 8.1.1 Enterprise Edition

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A P O C K E T G U I D E

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# Preface

## **This Document**

This Pocket Guide is based on TOGAF™ Version 8.1.1 Enterprise Edition. It is intended to help architects focus on the efficient and effective operations of their organization and senior managers understand the basics of The Open Group Architecture Framework (TOGAF). It is organized as follows:

- Chapter 1 provides a high-level view of TOGAF, enterprise architecture, and the contents of TOGAF.
- Chapter 2 provides an introduction to the Architecture Development Method (ADM), the method that TOGAF provides to develop enterprise architectures.
- Chapter 3 provides an overview of the key processes and deliverables of the ADM cycle.
- Chapter 4 provides an introduction to the Enterprise Continuum, a high-level concept that can be used with the ADM to develop an enterprise architecture.
- Chapter 5 provides an introduction to the TOGAF Resource Base, a set of resources, guidelines, processes, checklists, templates, and background information provided for architects to use during an application of the ADM.
- Appendix A provides a set of guidelines for developing a Business Scenario.
- Appendix B gives information on suggested further reading, including White Papers and example Business Scenarios.

The audience for this document is:

- Enterprise architects, business architects, IT architects, data architects, systems architects, solutions architects, and senior managers seeking a first introduction to TOGAF

A prior knowledge of IT architecture is not required. After reading this document, the reader seeking further information should refer to the TOGAF 8.1.1 Enterprise Edition documentation<sup>1</sup> available online.

### Conventions Used in this Document

The following conventions are used throughout this document 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.

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<sup>1</sup> The Open Group Architecture Framework (TOGAF), Version 8.1, Enterprise Edition, 2007 Edition incorporating TOGAF 8.1.1 (ISBN: 9789087530945), available at the bookshop at [www.vanharen.net](http://www.vanharen.net)

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# Chapter 1

## Introduction to TOGAF™

This chapter provides an introduction to TOGAF 8.1.1.

Topics addressed in this chapter include:

- TOGAF, its structure and content
- The kinds of architecture that TOGAF addresses

### 1.1 Introduction to TOGAF 8.1.1

TOGAF is an architecture framework – **The Open Group Architecture Framework**. Put simply, TOGAF is a tool for assisting in the acceptance, production, use, and maintenance of architectures. It is based on an iterative process model supported by best practices and a re-usable set of existing architectural assets.

TOGAF is developed and maintained by The Open Group Architecture Forum. The first version of TOGAF, developed in 1995, was based on the US Department of Defense Technical Architecture Framework for Information Management (TAFIM). Starting from this sound foundation, The Open Group Architecture Forum has developed successive versions of TOGAF at regular intervals and published each one on The Open Group public web site.

This document covers TOGAF 8.1.1. TOGAF 8.1 was first published in December 2003, with a minor revision in 2006 to address known defects and terminology inconsistencies, known as TOGAF 8.1.1.

TOGAF 8.1.1 can be used for developing a broad range of different IT architectures. TOGAF complements, and can be used in conjunction with, other frameworks that are more focused on specific deliverables for particular vertical sectors such as Government, Defense, and Finance. The

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key to TOGAF is the method – the TOGAF Architecture Development Method (ADM) – for developing an IT architecture that addresses business needs.

## 1.2 Structure of the TOGAF Document

TOGAF is structured into four parts as summarized in Table 1.1.

Table 1.1 Structure of the TOGAF Document

Part I: Introduction	This part provides a high-level introduction to some of the key concepts behind enterprise architecture and in particular the TOGAF approach.
Part II: Architecture Development Method	This is the core of TOGAF. It describes the TOGAF Architecture Development Method (ADM) – a step-by-step approach to develop and use an enterprise architecture.
Part III: Enterprise Continuum	This part describes the TOGAF Enterprise Continuum, a virtual repository of architecture assets, which includes the TOGAF Foundation Architecture, and the Integrated Information Infrastructure Reference Model (III-RM).
Part IV: Resources	This part comprises the TOGAF Resource Base – a set of tools and techniques available for use in applying TOGAF and the TOGAF ADM.

## 1.3 What is Architecture in the Context of TOGAF?

ANSI/IEEE Std 1471-2000 defines “architecture” as:

*“The fundamental organization of a system, embodied in its components, their relationships to each other and the environment, and the principles governing its design and evolution.”*

TOGAF embraces and extends this definition. In TOGAF, “architecture” has two meanings depending upon the context:

- A formal description of a system, or a detailed plan of the system at a component level to guide its implementation

- The structure of components, their inter-relationships, and the principles and guidelines governing their design and evolution over time

## 1.4 What kinds of Architecture does TOGAF deal with?

TOGAF 8.1.1 covers the development of four related types of architecture. These four types of architecture are commonly accepted as subsets of an overall enterprise architecture, all of which TOGAF is designed to support. They are shown as follows in Table 1.2.

Table 1.2 Architecture Types Supported by TOGAF

Architecture Type	Description
Business (or Business Process) Architecture	The business strategy, governance, organization, and key business processes.
Data Architecture <sup>2</sup>	The structure of an organization's logical and physical data assets and data management resources.
Applications Architecture	A blueprint for the individual application systems to be deployed, their interactions, and their relationships to the core business processes of the organization.
Technology Architecture	The logical software and hardware capabilities that are required to support the deployment of business, data, and application services. This includes IT infrastructure, middleware, networks, communications, processing, and standards.

<sup>2</sup> Data Architecture may sometimes be called Information Architecture in some organizations.

## 1.5 What does TOGAF Contain?

TOGAF is organized into three sections as illustrated in Figure 1.1, all of which provide some guidance on what the outputs of a TOGAF-derived architecture should be and how they should be structured:

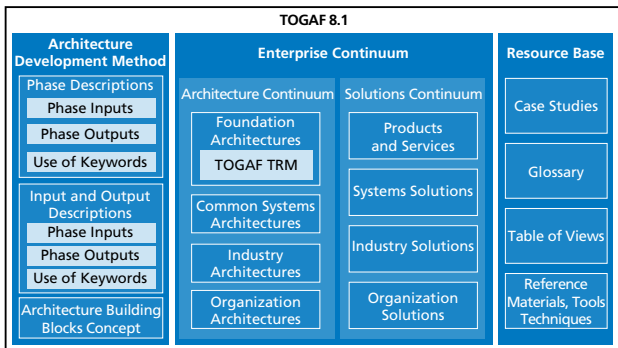


Figure 1.1 TOGAF Content Overview

The TOGAF concepts of Architecture Development Method, Enterprise Continuum, and Resource Base are intended to capture process, repository structure, and reference content respectively.

### 1.5.1 The TOGAF Architecture Development Method (ADM)

The **Architecture Development Method** (ADM) explains how to derive an organization-specific enterprise architecture that addresses business requirements. The TOGAF Architecture Development Method (ADM) is the major component of TOGAF and provides guidance for architects on a number of levels:

- It provides a number of **architecture development phases** (e.g., Business Architecture, Information Systems Architectures, Technology

Architecture) in a cycle, as an overall process template for architecture development activity.

- It provides a **narrative of each architecture phase**, describing the phase in terms of objectives, approach, inputs, steps, and outputs. The inputs and outputs sections provide an informal definition of the architecture content structure and deliverables.
- It provides cross-phase summaries covering requirements management, phase input, and phase output descriptions.

The ADM is described further in Chapter 2.

### 1.5.2 The Enterprise Continuum

The **Enterprise Continuum** provides a model for structuring an architecture repository – a “virtual repository” of all the architecture assets. This is based on architectures and solutions (models, patterns, architecture descriptions, etc.) that exist both within the enterprise and in the IT industry at large, and which the enterprise has collected for use in the development of architectures. Architecture Building Blocks reside within the Enterprise Continuum. At relevant places throughout the TOGAF ADM, there are reminders to consider which architecture assets the architect should use.

TOGAF itself provides two reference models for possible inclusion in an enterprise’s own Enterprise Continuum.

The Enterprise Continuum is described further in Chapter 4.

### 1.5.3 The TOGAF Resource Base

The TOGAF **Resource Base**, “the reference content”, is a set of resources, guidelines, templates, background information, etc. provided to be of assistance to the architect in the use of the ADM.



# Chapter 2

## The Architecture Development Method

This chapter describes the Architecture Development Method (ADM), its relationship to the rest of TOGAF, and high-level considerations for its use. It also includes a summary of each phase within the ADM.

Topics addressed in this chapter include:

- The TOGAF ADM and its relationship to other parts of TOGAF
- The phases of the TOGAF ADM
- The objectives, steps, inputs, and outputs to the ADM phases
- Requirements Management during the ADM cycle
- Scoping the Architecture Activity and adapting the ADM

### 2.1 What is the TOGAF ADM?

The Architecture Development Method (ADM), which forms the core of TOGAF, is a method for deriving organization-specific enterprise architectures and is the result of contributions from many architecture practitioners. It is specifically designed to address business requirements.

The ADM describes:

- A reliable, proven way of developing and using an enterprise architecture
- A method of developing architectures on different levels<sup>3</sup> (business, applications, data, technology) that enable the architect to ensure that a complex set of requirements are adequately addressed
- Linkages to practical case studies
- Guidelines on tools for architecture development

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<sup>3</sup> In TOGAF this is termed as a set of architecture views.

## 2.2 What is its Relationship to Other Parts of TOGAF?

There are two other main parts to TOGAF, besides the ADM: the Enterprise Continuum (see Chapter 4) and the TOGAF Resource Base (see Chapter 5); these are used to support application of the ADM within an enterprise architecture project.

## 2.3 What are the Phases of the ADM?

The ADM consists of a number of phases that cycle through a range of architecture views that enable the architect to ensure that a complex set of requirements are adequately addressed. The basic structure of the ADM is shown in Figure 2.1.

The application of the ADM is an iterative process, over the whole process, between phases, and within phases. Throughout the ADM cycle, there should be frequent validation of results against the original expectations, both those for the whole ADM cycle, and those for the particular phase of the process. Such validation should reconsider scope, detail, schedules, and milestones. Each phase should consider assets produced from previous iterations of the process and external assets from the marketplace, such as other frameworks or models.

The ADM supports the concept of iteration at three levels:

- **Cycling around the ADM.** The ADM is presented in a circular manner indicating that the completion of one phase of architecture work directly feeds into subsequent phases of architecture work.
- **Iterating between phases.** TOGAF describes the concept of iterating across phases (e.g., returning to Business Architecture on completion of Technology Architecture).
- **Cycling around a single phase.** TOGAF supports repeated execution of the activities within a single TOGAF phase as a technique for elaborating architectural content.

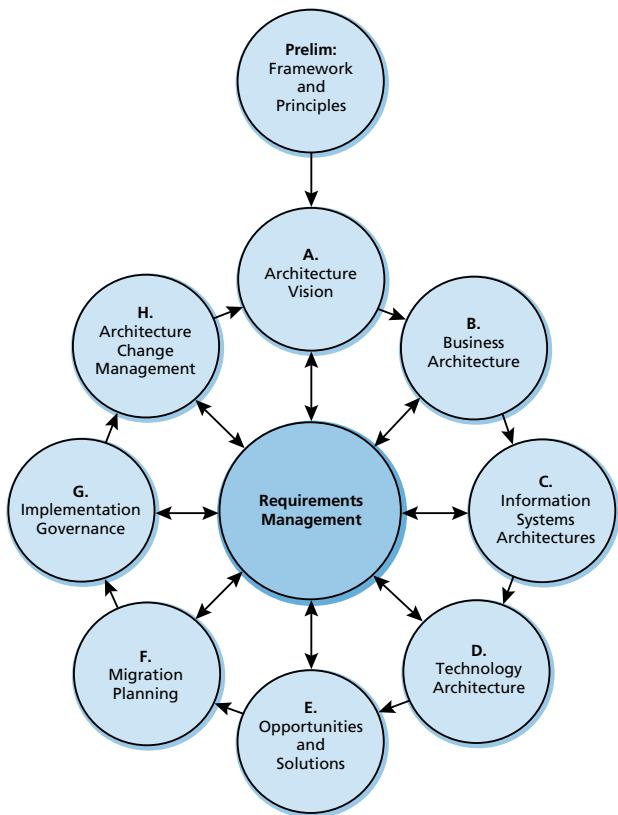


Figure 2.1 The Architecture Development Method Cycle

Table 2.1 Architecture Development Method Activities by Phase

ADM Phase	Activity
Preliminary Phase: Framework & Principles	Prepare the organization for successful TOGAF architecture projects.
Requirements Management	Every stage of a TOGAF project should be based on and validate business requirements. Requirements are identified, stored, and fed in and out of the relevant ADM phases, which dispose of, address, and prioritize requirements.
Phase A: Architecture Vision	Set the scope, constraints, and expectations for a TOGAF project. Validate the business context and create the Statement of Architecture Work.
Phase B: Business Architecture Phase C: Information Systems Architectures (Applications & Data) Phase D: Technology Architecture	Develop architectures at three levels: 1. Business 2. Information Systems 3. Technology In each case develop the Baseline (“as is”) and Target (“to be”) Architecture and analyze gaps.
Phase E: Opportunities & Solutions	Identify major implementation projects.
Phase F: Migration Planning	Analyze cost benefits and risk. Produce implementation roadmap.
Phase G: Implementation Governance	Architecture Contracts are prepared and issued by the Implementation Governance Board to ensure that the implementation project conforms to the architecture.
Phase H: Architecture Change Management	Ensure that the architecture responds to the needs of the enterprise.

## 2.4 The ADM in Detail

The following tables summarize the objectives, steps, and the inputs and outputs<sup>4</sup> of each phase of the ADM cycle.

### 2.4.1 Preliminary Phase: Framework & Principles

The Preliminary Phase prepares an organization to undertake successful enterprise architecture projects by defining how the organization is going to “do architecture”.

An overview of the phase is given below:

Objectives	Steps
<p>To confirm the commitment of the stakeholders</p> <p>To define the constraining principles</p> <p>To identify an organization’s “architecture footprint”; that is, the people responsible for performing the architecture work, where they are located, and their responsibilities</p> <p>To define the scope and assumptions; this is particularly important for large organizations where there may be a federated architecture environment</p> <p>To define the framework and detailed methodologies that are going to be used to develop the enterprise architecture in the organization; this is typically an adaptation of the ADM</p> <p>To set up and monitor the framework’s fitness-for-purpose; normally this includes an initial pilot project to check the viability of the approach within the organization</p> <p>To define the evaluation criteria for tools, repositories, and management processes to: capture, publish, and maintain architecture artifacts</p>	<p>TOGAF does not define specific steps for this phase, suggesting that this phase adapt the ADM and that the two main aspects to this should be as follows:</p> <p>Defining “How we do Architecture”: Principles and Frameworks</p> <p>Establishing IT Architecture Governance</p>

<sup>4</sup> Version numbers for specific deliverables have been omitted from this Pocket Guide since TOGAF states that the ADM numbering scheme is an example and that it should be adapted as appropriate.

Inputs	Outputs
TOGAF Architecture Development Method (ADM) Other architecture framework(s) Business strategy (including goals and drivers) IT governance strategy Architecture principles, including business principles Other federated architectures principles	Architecture principles Framework definition Restatement of business principles, goals, and drivers

## 2.4.2 Phase A: Architecture Vision

Phase A is about project establishment and initiates an iteration of the architecture process, setting the scope, constraints and expectations for the iteration. It is required in order to validate the business context and to create the Statement of Architecture Work.

Objectives	Steps
Obtain management commitment for this particular cycle of the ADM Validate business principles, goals, and drivers Define, scope, and prioritize architecture tasks Identify stakeholders, their concerns, and objectives Define business requirements and constraints Describe appropriate solutions Obtain formal approval to proceed Understand the influence on, and from, parallel architecture developments	Project Establishment Identify Business Goals and Business Drivers Review Architecture Principles, including Business Principles Define the scope Define Constraints Identify Stakeholders and Concerns, Business Requirements, and Architecture Vision Document the Statement of Architecture Work and Gain Approval

Inputs	Outputs
Request for Architecture Work Business strategy, business goals, and business drivers Architecture principles, including business principles Enterprise Continuum; that is, existing architecture documentation (framework description, architecture descriptions, existing baseline descriptions, etc.)	Approved Statement of Architecture Work Refined statements of business goals and strategic drivers Architecture principles, including business principles Architecture Vision including: Baseline Business Architecture Baseline Data Architecture Baseline Applications Architecture Baseline Technology Architecture Target Business Architecture Target Data Architecture Target Applications Architecture Target Technology Architecture

### 2.4.3 Phase B: Business Architecture

Phase B is about documenting the fundamental organization of the business, embodied in its business processes and people, their relationships to each other and the environment, and the principles governing its evolution and design.

Objectives	Steps
<p>Select architecture viewpoints to demonstrate how stakeholder concerns are addressed in the Business Architecture</p> <p>Select tools and techniques for viewpoints</p> <p>Describe the existing Business Architecture (the current baseline)</p> <p>Develop a Target Business Architecture</p> <p>Analyze the gaps between the Baseline and Target Architectures</p>	<p>Develop Baseline Business Architecture Description</p> <p>Identify Reference Models, Viewpoints, and Tools</p> <p>Create Business Architecture Model(s)</p> <p>Select Business Architecture Building Blocks</p> <p>Conduct a Formal Checkpoint Review of the Architecture Model and Building Blocks with Stakeholders</p> <p>Review Non-Functional (Qualitative) Criteria</p> <p>Complete the Business Architecture</p> <p>Perform Gap Analysis and Create Report</p>
Inputs	Outputs
<p>Request for Architecture Work</p> <p>Approved Statement of Architecture Work</p> <p>Refined statements of business goals and strategic drivers</p> <p>Architecture principles, including business principles</p> <p>Enterprise Continuum</p> <p>Architecture Vision, including:</p> <p>Baseline Business Architecture</p> <p>Baseline Data Architecture</p> <p>Baseline Applications Architecture</p> <p>Baseline Technology Architecture</p> <p>Target Business Architecture</p> <p>Target Data Architecture</p> <p>Target Applications Architecture</p> <p>Target Technology Architecture</p>	<p>Statement of Architecture Work, updated if necessary</p> <p>Validated business principles, business goals, and strategic drivers</p> <p>Baseline Business Architecture (detailed)</p> <p>Target Business Architecture (detailed)</p> <p>Views corresponding to the selected viewpoints addressing key stakeholder concerns</p> <p>Gap Analysis results</p> <p>Technical Requirements</p> <p>Business Architecture Report</p> <p>Updated business requirements</p>

#### 2.4.4 Phase C: Information Systems Architecture

Phase C is about documenting the fundamental organization of an organization's IT systems, embodied in the major types of information

and the application systems that process them. There are two steps in this phase, which may be developed either in order or in parallel:

- Data Architecture
- Applications Architecture

#### 2.4.4.1 Data Architecture

Objectives	Steps
Define the types and sources of data needed to support the business, in a way that can be understood by the stakeholders	Develop Baseline Architecture Description Review and Select Principles, Reference Models, Viewpoints, and Tools Create Data Architecture Model(s) Select Data Architecture Building Blocks Conduct a Checkpoint Review of the Architecture Model Review Qualitative Criteria Complete the Data Architecture Conduct Checkpoint/Impact Analysis Perform Gap Analysis and Create Report
Inputs	Outputs
Data principles Request for Architecture Work Statement of Architecture Work Architecture Vision Baseline Business Architecture Target Business Architecture Baseline Data Architecture Target Data Architecture Relevant Technical Requirements Gap Analysis results Re-usable building blocks (from organization's Enterprise Continuum)	Statement of Architecture Work Baseline Data Architecture Validated data principles, or new data principles Target Data Architecture Data Architecture views corresponding to the selected viewpoints Data Architecture Report Gap Analysis results Relevant Technical Requirements that will apply to this evolution of the architecture development cycle Impact Analysis Updated business requirements

### 2.4.4.2 Applications Architecture

Objectives	Steps
Define the kinds of application systems necessary to process the data and support the business	Develop Baseline Applications Architecture Description Review and Validate Principles, select Reference Models, Viewpoints, and Tools Create Architecture Models for each Viewpoint Identify Candidate Applications Conduct a Checkpoint Review Review the Qualitative Criteria Complete the Applications Architecture Perform Gap Analysis and Create Report
Inputs	Outputs
Application principles Request for Architecture Work Statement of Architecture Work Architecture Vision Relevant Technical Requirements Gap Analysis results (from Phase B: Business Architecture) Baseline Business Architecture Target Business Architecture Baseline Applications Architecture Target Applications Architecture Re-usable building blocks (from organization's Enterprise Continuum)	Statement of Architecture Work Baseline Applications Architecture Target Applications Architecture Validated application principles, or new application principles Applications Architecture views corresponding to the selected viewpoints Applications Architecture Report Gap Analysis results Impact Analysis Updated business requirements

### 2.4.5 Phase D: Technology Architecture

Phase D is about documenting the fundamental organization of the IT systems, embodied in the hardware, software and communications technology.