

THE CERTIFIED BLOCKCHAIN SOLUTIONS ARCHITECT (CBSA) - ALL IN ONE GUIDE

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"The Certified Blockchain Solutions Architect (CBSA) exam is an elite way to demonstrate your knowledge and skills in this emerging space."

- Blockchain Training Alliance

Chapter 1

What is a Certified Blockchain Solutions Architect (CBSA)?

Chapter Introduction

In this chapter we cover the important facets of the Certified Blockchain Solutions Architect (CBSA) certification and dive into the exam objectives.

Blockchain is increasingly a critical skillset for enterprise architecture, sales engineer, software engineers as well as developers. Blockchain is also a must know skillset for less technical leaders such as CEO, CTO, CFO and other important leadership roles.

This chapter will cover what this exam is about, why you should take the exam and I'll provide my real-life working experience into what these objectives mean at a macro level before proceeding onto the micro level details of each objectives.

CHAPTER OVERVIEW

In this chapter you will learn:

- What is the Certified Blockchain Solutions Architect (CBSA) Exam and why you should consider taking this exam?
- What are the exam objectives at a macro level (skill sets)?
- What is the certification process and what should I expect before and after taking the exam?



Why Take Certified Blockchain Solutions Architect Exam. Let's review the basics of why you may want to take this exam.

What is the Certified Blockchain Solutions Architect (CBSA) Exam?



CBSA Exam Overview Covered

- Topic – Why Take Certified Blockchain Solutions Architect Exam

In this topic the focus on what the exam is about and why you should take the exam.

The main objectives you will learn about is

- What is The Certified Blockchain Solutions Architect(CBSA) exam?
- Why should you take this challenging exam?



What is a Certified Blockchain Solutions Architect(CBSA)?

Here is the official Certified Blockchain Solutions Architect (CBSA) Certification description from the Blockchain Training Alliance (BTA) website.

- The Certified Blockchain Solution Architect (CBSA) exam is an elite way to demonstrate your knowledge and skills in the Blockchain arena.
- You will become a member of a community of Blockchain leaders.
- The Certified Blockchain Solution Architect (CBSA) exam is a professionally delivered exam which is proctored thru Pearson.
- Passing this certification will distinguish you as one that is knowledgeable in blockchain architecture.



What is a CBSA?

What is a Certified Blockchain Solutions Architect (CBSA)?

- A Certified Blockchain Solutions Architect is a great certification for anyone looking to prove they have a baseline knowledge in blockchain and cryptocurrency basics, blockchain terminology and basic understanding of blockchain design and how to meet business objectives of an enterprise.
- The exam is clearly targeted to a wide audience which is clearly stated on the Blockchain Training Alliance's website.

<https://blockchaintrainingalliance.com/>

The target audience is:

- Consultants
- Programmers & Developers
- University Professors
- Software Engineers
- CEO/CTO/CIO
- Government Officials

I would also recommend other roles that would benefit from this certification would be:

- Systems engineers
- pre and post sales engineers
- sales executives
- enterprise architects
- IT managers.

From an organization perspective I would also add that IT Vendors, VARs and systems integrators that sell solutions to enterprise organization would also gain value from the certification.

Why should you take this challenging Exam?

I lay out four reasons to consider this exam over some other industry certifications.

1. First reason is that you do not need to take Blockchain Training Alliance's costly training to be a candidate for the exam and also pass the exam. This is a big differentiator from some other blockchain certifications.
2. Second reason is that Blockchain Training Alliance (BTA) clearly was first to market with an exam that was professional developed. Objectives were clear and they appeared to follow most of the Bloom learning best practices from what I could derive
3. Third reason is that it a proctored exam at a Pearson testing center. This is big difference where exams were taken online and basically with an open book. To get on board at Pearson it takes a substantial investment of around \$80,000 dollars which shows an investment.

As a hiring manager you would likely be willing to pay for a certification where someone tested at a testing center than did online at home with no proctors.

4. Fourth reason is around the fact that the exam will test your knowledge around blockchain technologies and validate your knowledge in a professionally documented manner.



Exam Objectives are really important to review and understand what you will be tested on.

Exam Objectives



EXAM OBJECTIVES COVERED

- What are the tested objectives?

In this topic we will cover what the exam objectives and a brief review of each objective. The exam objectives are referred to by the Blockchain Training Alliance(BTA) as Skill Sets.

Skill Sets or Objectives these are what you would want to review and study before taking the exam. Proper understanding of what you will be tested on as well as how you would be tested is a big deal in your success as a candidate for the exam.

The main objective of this chapter .

- Cover the exam objectives tested and provide high level macro insight

Exam Objectives - My Unbiased Review of the CBSA.



Exam Objectives

The exam objectives are clearly listed on the Blockchain Training Alliance's (BTA) website. BTA calls the exam objectives actually "skill sets" to be clear on their website.

I have participated professionally in several areas of exam development and know more than a thing or two about test development stages.

From an experience standpoint I was a prior CompTIA SME and Brocade SME who has participated in the development of 8 exams at various levels such as Item Development, Job Task Analysis and Cut Score exercises.

I can state that I believe overall the exam objectives are fairly clear at a macro level and give potential test candidates a high level of what to expect.

However, I do not believe the exam objectives are at a micro level detailed enough for certification candidates and therefore I have found this can cause students to get a bit overwhelmed. Having vague objectives can be misleading and can cause exam candidates to be studying wrong subject areas. For example, Ethereum and Hyperledger basics and use cases are tested on the exam but there is nothing in the exam stating these blockchains.

For examples, of well written exam objectives clearly defined in sections and in a logical order view any of CompTIA's exam objectives for what I mean.

The main value of this book I believe will be focused on exam candidates that did take an official vendor course which at the time of writing is 3 days.

I will break down each of these tested objectives (skillsets) simply in a logical order and easy to digest format for an efficient test preparation process.

The book will also provide significant detail from real working experience as part of the objective's coverage.

My opinion of the Blockchain Training Alliance's (BTA) objectives (skill sets) are that they are vague but with some minor efforts could be professionally specified without challenging the exam security and experience. This is their first take, so credit needs to be given especially with no real competition in the blockchain education market.

Overall, I believe it's a great exam and worth your effort.

Official Exam Objectives as of 02/09/2020

- The difference between proof of work, proof of stake, and other proof systems and why they exist
- Why cryptocurrency is needed on certain types of blockchains
- The difference between public, private, and permissioned blockchains
- How blocks are written to the blockchain
- Where cryptography fits into blockchain and the most commonly used systems
- Common use cases for public blockchains
- Common use cases for private & permissioned blockchains
- What is needed to launch your own blockchain
- Common problems & considerations in working with public blockchains
- Awareness of the tech behind common blockchains
- When is mining needed and when it is not?
- Byzantine Fault Tolerance
- Consensus among blockchains
- What is hashing
- How addresses, public keys, and private keys work
- What is a smart contract?
- Security in blockchain
- Brief history of blockchain
- The programming languages of the most common blockchains
- Common testing and deployment practices for blockchains and blockchain-based apps

There you have the official objectives so now let me cover each of these at a high level and provide some insight into

High Level Review of Exam Objectives



High Level Exam
Objectives Review

The objectives as above is the extent of detail that is provided by the certification body which is the Blockchain Training Alliance (BTA). What I am going to now cover is each objective at a macro before we proceed to the next chapter where the detailed objective coverage starts.

- The difference between proof of work, proof of stake, and other proof systems and why they exist

This objective is focused on can you identify features and functions of consensus methods. Understanding what consensus is faster, slower, more economical, etc. The other area tested was what blockchain uses specific consensus methods.

- Why cryptocurrency is needed on certain types of blockchains

This objective is focused solely on can you specify reasons a blockchain would use a cryptocurrency or a token. Main reasons are commonly is the blockchain public or private as well node distribution and control.

- The difference between public, private, and permissioned blockchains

This objective is quite clear and one of the easier objectives. Should you specify a public blockchain that has transparency, or should you specify for an enterprise a private blockchain that is centralized with no transparency.

- How blocks are written to the blockchain

This objective covers the details of how blocks are logically ordered on a blockchain. A block contains data of the transaction, hash of the block and hash of the previous block. There are also some basic terms to learn such as a merkle root and metadata.

- Where cryptography fits into blockchain and the most commonly used systems

This objective covers the area of cryptography which is the use of mathematical equations to facilitate secrecy and integrity for transactions and authentication and anonymity to the blockchain communications.

- Common use cases for public blockchains

This objective is focused on why an enterprise would use a public blockchain over a private blockchain over Hyperledger.

- Common use cases for private & permissioned blockchains

This objective is focused on why an enterprise would use a private or permissioned blockchain over a public blockchain over Ethereum.

- What is needed to launch your own blockchain

This objective is focused on what components and planning goes into a blockchain deployment.

- Common problems & considerations in working with public blockchains

This objective is focused on what challenges around public blockchains around security, transparency, user management, etc.

- Awareness of the tech behind common blockchains

This objective is focused around the technologies that work together to make blockchain possible such encryption, programs and peer to peer networks.

- When is mining needed and when it is not?

This objective is focused on identifying the use case for having miners in a blockchain and when not to such as in an enterprise blockchain.

- Byzantine Fault Tolerance

This objective is focused on Byzantine Fault Tolerance (BFT) and the "Byzantine Generals' Problem" which states that no two nodes on a decentralized network can entirely and irrefutably guarantee that they are displaying the same data.

- Consensus among blockchains

This objective is focused on contrasting the differences between major consensus methods such as Proof of Work (PoW), Proof of Stake (PoS) and other such as Proof of Elapsed Time (PoeT) and Proof of Burn (PoB). Consensus is a dynamic way of reaching agreement in a group.

- What is hashing

This objective is focused on challenging you on the basics of hashing technology and terminology. Hashing means taking an input string of any length and giving out an output of a fixed length

- How addresses, public keys, and private keys work

This objective covers technically how both private key and public keys are a part of encryption that encodes the information. It covers both symmetric and asymmetric encryption and terminology such as identity, privacy and x.509 certificates.

- What is a smart contract?

This objective is focused on the high-level understanding of basics of smart contracts. Terminology is covered such as dapps and chaincode.

- Security in blockchain

This objective covers best practices in IT security lightly to protect your blockchains.

- Brief history of blockchain

This objective simply covers the history of Bitcoin and we would need to learn some release dates.

- The programming languages of the most common blockchains

This objective is focused on identifying what programming languages are used with Ethereum and Hyperledger Fabric.

- Common testing and deployment practices for blockchains and blockchain-based apps

This objective is widely focused on the Software Development Lifecycle (SDLC, Agile and other development frameworks and best practices. This objective also covers testing around blockchains such as why a testnet is used.

As you may see the Certified Blockchain Solutions Architect (CBSA) exam has a broad area around its tested objectives. When preparing for any exam it is of course critical to understand the objectives and how they will be tested. This book aims to make these objectives clearly defined for you so all you need to do is learn them effectively.

Let us get started now on the exam preparation.