

How does SSO Single Sign On Authentication Works?

Demystifying SSO: A Deep Dive into the Mechanics of Single Sign-On Authentication



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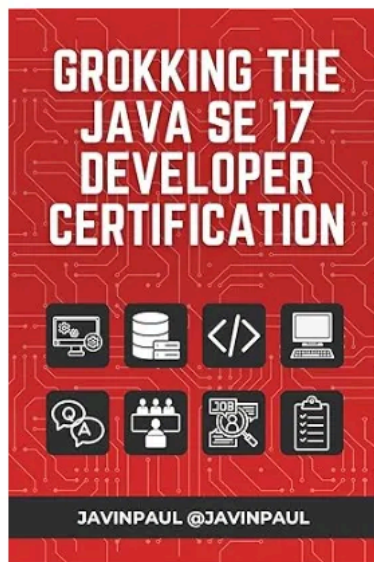
Hello guys, In today's digital landscape, you will often find yourself interacting with multiple applications and services that require authentication. Since juggling multiple usernames and passwords can be cumbersome and time-consuming.

That's where **Single Sign-On (SSO) comes into play**. SSO offers a streamlined and secure approach to authentication, allowing users to access multiple applications with a single set of credentials.

But before we go into SSO details, I have exciting news to share with you. My new book, **Grokking the Java SE 17 Developer certification** is now available on Gumroad and Amazon. If you are preparing for Java SE 17 certification and 1z0-829 exam then this book can help you. It contains detailed practice questions on each topic which you can use to build the speed and accuracy required to pass this certification on the first attempt.

For launch, it's also available at a **50% discount on the regular price** and you can get it for just \$9.95 by using code friends50.

If you like Kindle format, you can also [get it on Amazon](#) where it is the #1 new release now



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There is no doubt that passing Java certification is very challenging and Java SE 17 Developer certification with exam code 1Z0-829 is one of the toughest exams, I have seen so far. While there are many study guides available in the market, they don't give you enough practice opportunity which is required to build the speed and accuracy you need to pass the exam on the very first attempt.

This book aims to fill this gap and gives you multiple-choice and multiple answers to practice questions, and topic-by-topics to test your knowledge. You can use these practice questions to test your preparation level and also learn by reading explanations and why other answers are not correct. This is the way, I scored 100% on my SCJP exam many years before.

Here are the topics covered in this book:

Coverage of 100% of all exam objectives in this Study Guide means you'll be ready for:

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Now coming back to SSO, for a developer, it's important to know not just what is SSO but also how it works, and it's also a popular interview question. In my earlier article, I explained the **difference between JWT, SAML, and OAuth** and In this article, we will delve into the workings of SSO, its benefits, and the underlying technologies that make it possible.

Now that, we know the basics, it's time to deep dive and learn them in more detail so that you can answer any follow-up questions.

If you are preparing for System design interviews and want to learn System Design in-depth then you can also check out sites like **ByteByteGo**, **Design Guru**, **Exponent**, **Educative**, and **Udemy** which have many great System design courses and if you need free system design courses you can also see the **below article**.

What is Single Sign-On (SSO)?

Single Sign-On, as the name suggests, enables users to authenticate once and gain access to multiple applications or systems without the need for re-authentication for each service.

It provides a seamless user experience by eliminating the need to remember and enter different usernames and passwords for each application.

How Does SSO Work?

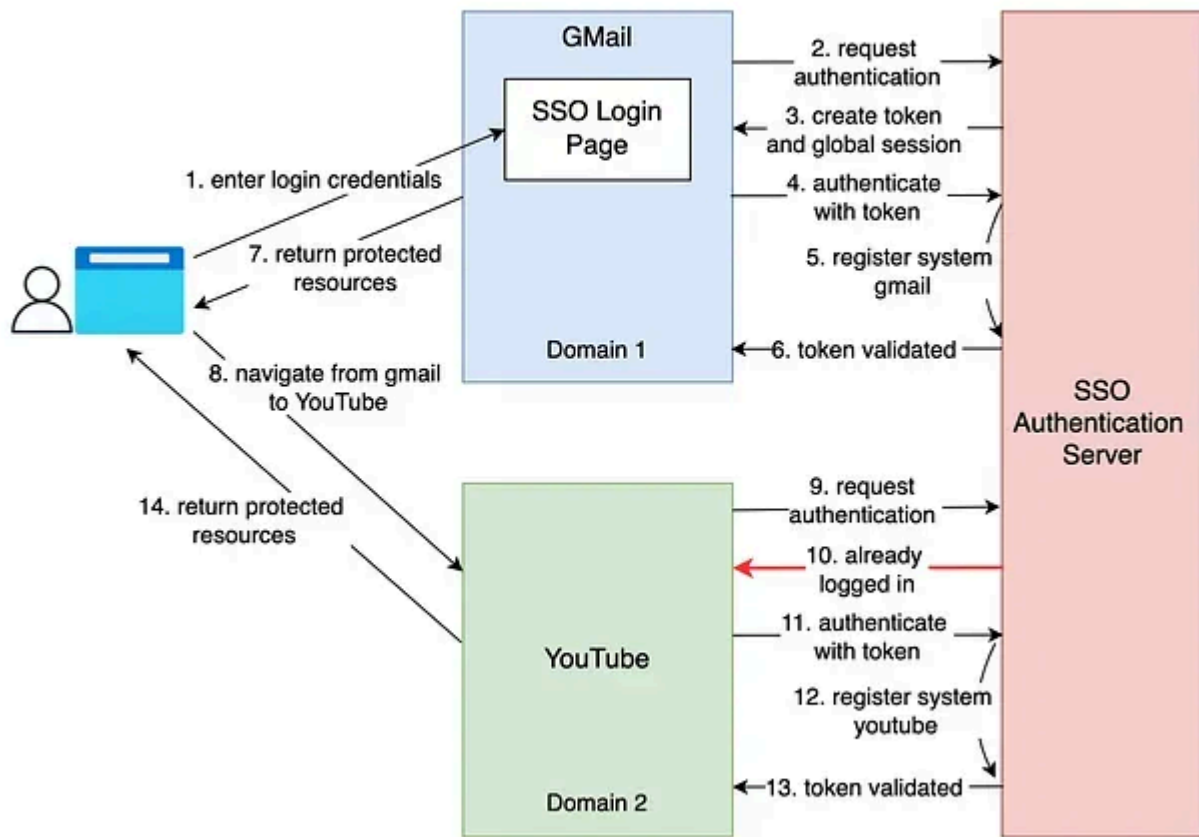
Here are the exact steps of how the Single Sign-on process works:

1. **User Authentication:** The SSO process begins when a user attempts to access an application or service that is integrated with an SSO solution. The user is prompted to

provide their credentials, typically a username and password, on a central authentication page known as the Identity Provider (IdP).

2. **Authentication Verification:** The IDP verifies the user's credentials by checking against its user database or by connecting to an external authentication source, such as a directory service like LDAP or Active Directory. If the credentials are valid, the user is considered authenticated.
3. **Issuance of Security Tokens:** Once the user is authenticated, the IdP generates a security token, such as a Security Assertion Markup Language (SAML) token or **JSON Web Token (JWT)**. This token contains information about the user's identity and authentication status.
4. **Token Exchange:** The user's client application receives the security token and submits it to the *Service Provider (SP)*, which is the application or service the user intends to access. The SP must be configured to trust the IdP for authentication.
5. **Token Verification and User Authorization:** The SP validates the security token by verifying its integrity, authenticity, and expiration. It also checks if the user's identity and attributes meet the required authorization criteria. Once the token is successfully verified, the user is granted access to the SP's resources or functionalities.

Also, If you are a visual learner like me then you can also check the following diagram from **ByteByteGo**, which nicely explains how exactly SSO works by giving Gmail and YouTube examples, which are both governed by Google:



What are the key Benefits of SSO?

Since there are a lot of authentication and authorization technologies out there hence is important to know the benefits SSO offers to convince stakeholders and teammates:

1. **Simplified User Experience:** Users only need to remember and enter their credentials once, reducing the hassle of managing multiple usernames and passwords.
2. **Enhanced Security:** SSO eliminates the need for users to create and manage weak or duplicate passwords across multiple applications, improving overall security posture.
3. **Increased Productivity:** With SSO, users can quickly and seamlessly access various applications, saving time and reducing frustration.
4. **Centralized User Management:** SSO allows organizations to manage user identities and access rights from a central location, simplifying administration and reducing operational overhead.
5. **Auditing and Compliance:** SSO solutions often provide comprehensive audit logs and reporting capabilities, aiding in compliance with security and regulatory requirements.

You can see there are plenty of benefits of using SSO and why every organization should use SSO to give access to their internal applications to their employee.

Coming back to how SSO works, I also found this interesting video on the [ByteByteGo](#) YouTube channel which explains how SSO works in slightly more detail, if you are not in a hurry and have time to watch, do watch this video to understand Single Sign on working in more detail.

What Is Single Sign-on (SSO)? How It Works



System Design Interview Resources

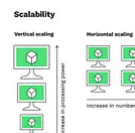
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Conclusion

In short, Single Sign-On (SSO) is a **powerful authentication mechanism** that simplifies access to multiple applications and services while enhancing security and user experience.

By reducing the burden of remembering multiple credentials and streamlining the authentication process, SSO empowers organizations and users alike. With its numerous benefits, SSO continues to gain popularity as a reliable and efficient solution for managing authentication across diverse systems and applications.

And, if you are preparing for Java SE 17 certification then feel free to *check out my new book*. To celebrate the launch, I Am also offering a 30% discount on all my books and courses, you can use code friends30 or click the link below.

- 1. 30% discount on Grokking the Java Interview
- 2. 30% discount on Grokking the Spring Boot Interview
- 3. 30% discount on Java + Spring + SQL Interview Bundle -

As always, Big Thanks for your support, and please let me know how you found the book once you get your copy.

All the best for your Java SE 17 certification in 2024

Javin



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