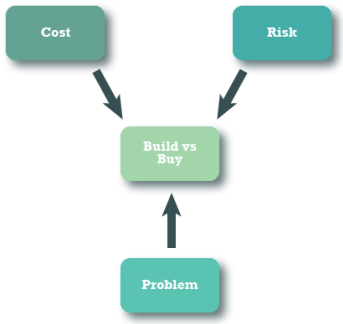
SeleniumBox
Enterprise Selenium Grid on-premises|managed|scalable

Why buying a commercial Selenium Grid solution is (typically) better than building your own



This is a summary of our whitepaper available at https://seleniumbox.com/whitepaper/

Cost:

Depending on the size and complexity of your organization, the cost of building and maintaining your own Selenium Grid varies greatly. Below are some examples from our customers of the cost and effort required when building your own solution.

	Small Enterprise	Medium Enterprise	Large Enterprise
Build	USD 250K	USD 650K	USD 3-5M
Maintain	USD 150K	USD 350K	USD 2.5M

- Building and maintaining your own enterprise grade Grid requires significant resources
- Typical timeframe for building: 9-24 months
- Required staff: senior level software engineers with deep know how in Selenium, system administrators, project manager, security engineers, network architects
- Time lost in recruiting staff and building the solution: min. 1 year
- Maintenance and further development: team of developers, system admin and security personnel required
- If mobile testing is in scope, these figures are significantly higher. Appium / Mobile is extremely complex to set up in an enterprise grade fashion especially if you want it to work in a combined Grid for browsers and mobile.

Business Continuity:

- A homegrown Grid requires a highly specialized internal team (with backup) for support, maintenance and further development
- In case of restructuring , attrition or if key people leave the team the entire test automation infrastructure is jeopardized
- When buying a commercially supported solution like Selenium Box, there are clear SLAs in place and we also provide 24/7 support

Skills / Talent:

- Building and maintaining your own Grid requires a team that has in depth knowledge of Selenium (down to the protocol level) as well as advanced skills in server operations, proxies, firewalls etc. This is typically hard to find and unite in one team.

Productivity:

- Building and maintaining test automation infrastructure is (most likely) not your core business.
- With engineering resources being scarce, organizations should focus on tasks and topics that are their core business and lie within their core competencies. For everything else they should use commercial solutions (just like everybody buys Microsoft Office rather than building a text editor on their own).

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Functionality / Features:

- The open source Selenium Grid is fundamentally not enterprise ready as there are many key features missing. As well, the architecture does not allow for easily building these features in. The open source Selenium Grid was never meant to be used in enterprises.
- Below is a high-level overview of the features Selenium Box in comparison to an open source grid

Feature	Open Source Selenium Grid	Selenium Box
DESKTOP BROWSERS		
Chrome	YES	YES
Firefox	YES	YES
Firefox ESR	YES	YES
Internet Explorer (*)	YES	YES
Edge (*)	YES	YES
Safari (*)	YES	YES
* very high maintenance effort		
MOBILE		
iOS	NO	YES
Android	NO	YES
ENTERPRISE FEATURES		
Video Recording	NO	YES
Live View / Realtime debugging	NO	YES
Enterprise Access Control	NO	YES
Enterprise Grade Reliability and Scalability	NO	YES
Proof of concept support	NO	YES
High availability / fault tolerant setup	NO	YES
Kerberos / SPNEGO Authentication Support	NO	YES
Active Directory Integration	NO	YES
Atlassian CROWD Integration	NO	YES
Enterprise proxy support	NO	YES
End to End encryption / HTTPS	NO	YES
Custom SSL support	NO	YES
Custom Windows Images	NO	YES
Rights / Permissions Management	NO	YES
Manual / exploratory testing support	NO	YES
REST API access	NO	YES
Project Management	NO	YES
Token Access	NO	YES
24/7 Enterprise Support	NO	YES
Dedicated Engineering Contact	NO	YES
Bespoke Trainings	NO	YES
Professional Services	NO	YES
Customer Success Manager	NO	YES
Reporting / Monitoring	NO	YES
Usage metrics	NO	YES
Maintenance-free	NO	YES
Concurrency control / Quality of Service	NO	YES
Billback capabilities	NO	YES

Conclusion:

A secure, reliable and scalable Selenium Grid cross browser infrastructure is crucial for a successful continuous testing and DevOps setup. Setting up and maintaining a mature enterprise grade Selenium Grid infrastructure requires a significant investment and is a complex undertaking. While a homegrown solution can be a good starting point, for most enterprises they quickly become unmanageable. Homegrown solutions require a big up-front investment in terms of engineering resources as well as deep Selenium Grid know-how. Maintenance for a homegrown Selenium Grid is time consuming and prone to error due to frequent new release of browsers and the Selenium ecosystem.

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