SAMM (Software Assurance Maturity Model) is the OWASP framework to help organizations assess, formulate and implement a strategy for software security, which can be integrated into their existing Software Development Lifecycle (SDLC). SAMM is fit for most contexts: whether your organization is mainly developing, outsourcing or rather focusing on acquiring software, whether you are using a waterfall or an agile method, the same model can be applied. This quick start guide walks you through the core steps to execute your SAMM-based secure software practice.
BACKGROUND

Before diving into actionable steps for a quick start, let’s first briefly describe the model itself. SAMM is based around a set of 12 security practices, which are grouped into 4 business functions. Every security practice contains a set of activities, structured into 3 maturity levels (1 - 3). The activities on a lower maturity level are typically easier to execute and require less formalization than the ones on a higher maturity level. The diagram below illustrates this with example activities found under “Education and Guidance” security practice (which is part of the Governance business function):

The structure and setup of the SAMM maturity model are made to support (i) the assessment of the current software assurance posture, (ii) the definition of the strategy (i.e. the target) that the organization should take, (iii) the formulation of an implementation roadmap of how to get there and (iv) prescriptive advice on how to implement particular activities. In that sense, the value of SAMM lies in providing a means to know where your organization is on its journey towards software assurance, and to understand what is recommended to move to a next level of maturity. Note that SAMM does not insist that all organizations achieve maturity level 3 in every category. Indeed, you determine the target maturity level for each “Security Practice” that is the best fit for your organization and its needs. SAMM provides a number of templates for typical organizations to this end, but it is recommended that these be adapted to the needs of your organization.
HOW TO APPLY?

The diagram below illustrates the typical approach of using SAMM in an organization, starting with preparation, going through assessment, setting the target, planning, implementation to roll-out. SAMM is particularly well suited to support continuous improvement, in which case the cycle is executed continuously (typically in periods of 3 to 12 months). Note that it is not necessary to always execute all these steps though. SAMM could be used to perform just the assessment, or to only define the long-term goals for instance.
So how do you go about executing the different steps described above? To get started, the following table provides more information for each step in terms of the goal, the different activities to be executed and the most important supporting resources.

<table>
<thead>
<tr>
<th>STEP</th>
<th>PURPOSE</th>
<th>ACTIVITIES</th>
<th>RESOURCES</th>
<th>BEST PRACTICES</th>
</tr>
</thead>
</table>
| 1 PREPARE | Ensure a proper start of the project | Define the scope  
Set the target of the effort: the entire enterprise, a particular application or project, a particular team.  
Identify stakeholders  
Ensure that important stakeholders are identified and well aligned to support the project.  
Spread the word  
Inform people about the initiative and provide them with information to understand what you will be doing | Consider involving at least:  
- Executive Sponsor  
- Security Team  
- Developers  
- Architects  
- Business Owners  
- QA Testers  
- Managers  
SAMM wiki: https://www.owasp.org/index.php/OWASP_SAMM_Project  
SAMM downloads: https://www.owasp.org/index.php/OWASP_SAMM_Project#tab=Downloads | • Pre-screen software development maturity to have realistic expectations  
• The smaller the scope, the easier the exercise |
| 2 ASSESS | Identify and understand the maturity of your chosen scope in each of the 12 software security practices | Evaluate current practices  
Organize interviews with relevant stakeholders to understand the current state of practices within your organization. You could evaluate this yourself if you understand the organization sufficiently well. SAMM provides lightweight and detailed assessments (where the latter is an evidence-based evaluation) – use the detailed one only if you want to have absolute certainty about the scores.  
Determine maturity level  
Based on the outcome of the previous activity, determine for each security practice the maturity level according to the SAMM maturity scoring system. In a nutshell, when all activities below and within a maturity level have been implemented, this level can be used for the overall score. When extra higher-level activities have been implemented without reaching a full next level, add a “+” to the rating. | SAMM toolbox: https://www.owasp.org/index.php/OWASP_SAMM_Project#tab=Downloads  
Both of these resources provide you with:  
- Assessment questions  
- Maturity level calculation | • Ensure consistent assessment for different stakeholders and teams by using the same questions and interviewer  
• Consider using different formats to gather data e.g., workshops vs. interviews  
• Ensure interviewees understand the particularities of activities  
• Understand which activities are not applicable to the organization and take this into account in the overall scoring  
• Anticipate/document whether you plan to award partial credit, or just document various judgement calls  
• Repeat questions to several people to improve the assessment quality  
• Consider making interviews anonymous to ensure honesty  
• Don’t take questions too literally |
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</thead>
<tbody>
<tr>
<td>3</td>
<td>SET THE TARGET</td>
<td>Define the target</td>
<td>See the How-To-Guide for predefined templates</td>
<td>• Take into account the organisation’s risk profile</td>
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<td>Software Assurance Maturity Model (SAMM) Roadmap Chart Worksheet (part of the OpenSAMM Benchmarking as a comparative source)</td>
<td>• Respect dependencies between activities</td>
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<td></td>
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<td></td>
<td>• As a rough measure, the overall impact of a software assurance effort is estimated at 5 to 10% of the total development cost.</td>
</tr>
<tr>
<td>4</td>
<td>DEFINE THE PLAN</td>
<td>Determine change schedule</td>
<td>SAMM Resources: <a href="https://www.owasp.org/index.php/SAMM-Resources">https://www.owasp.org/index.php/SAMM-Resources</a></td>
<td>• Identify activities that can be completed quickly and successfully early in the project</td>
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<td>SAMM project plan template: <a href="https://www.owasp.org/index.php/OWASP_SAMM_Project#tab=Downloads">https://www.owasp.org/index.php/OWASP_SAMM_Project#tab=Downloads</a></td>
<td>• Start with awareness / training</td>
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<td></td>
<td></td>
<td>Develop/update the roadmap plan</td>
<td>Useful OWASP resources per activity are described at <a href="https://www.owasp.org">https://www.owasp.org</a></td>
<td>• Adapt to coming release cycles / key projects</td>
</tr>
<tr>
<td>5</td>
<td>IMPLEMENT</td>
<td>Implement activities</td>
<td></td>
<td>• Treat legacy software separately. Do not mandate migration unless really important.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Avoid operational bottlenecks (in particular for the security team)</td>
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<tr>
<td>6</td>
<td>ROLL-OUT</td>
<td>Evangelize improvements</td>
<td></td>
<td>• Categorize applications according to their impact on the organization. Focus on high-impact applications.</td>
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<td></td>
<td></td>
<td>Measure effectiveness</td>
<td></td>
<td>• Use team champions to spread new activities throughout the organization</td>
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</table>
As part of a quick start effort, the first four phases (preparation, assess, setting the target and defining the plan) can be executed by a single person in a limited amount of time (1 to 2 days). Making sure that this is supported in the organization, as well as the implementation and roll-out phases typically require much more time to execute.

**OWASP RESOURCES**

The following SAMM resources are referenced in the SAMM Quick Start Guide:

- **SAMM wiki**: https://www.owasp.org/index.php/OWASP_SAMM_Project
- **SAMM downloads**: https://www.owasp.org/index.php/OWASP_SAMM_Project#tab=Downloads
- **SAMM toolbox**: https://www.owasp.org/index.php/OWASP_SAMM_Project#tab=Downloads
- **Browse SAMM online**: https://www.owasp.org/index.php/OWASP_SAMM_Project#tab=Browse_Online
- **SAMM project plan template**: https://www.owasp.org/index.php/OWASP_SAMM_Project#tab=Downloads
- **OWASP resources**: https://www.owasp.org/index.php/Main_Page

To apply SAMM you will find a lot of great resources at OWASP. We have created a SAMM resources collection on the OWASP wiki.
Go to https://www.owasp.org/index.php/SAMM-Resources to discover all our SAMM Resource online.
This wiki category links OWASP and other resources to SAMM Security practices.

**FINAL NOTES**

The best way to grasp SAMM is to start using it. This document has presented a number of concrete steps and supportive material to execute on. Now it’s your turn. We warmly invite you to spend a day or two on following the first steps, and you will quickly understand and appreciate the added value of the model. Enjoy!

Suggestions for improvements are very welcome. And if you’re interested, consider to join the mailinglist or become part of the SAMM community.

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