Atlassian Crowdsourced Penetration Test Results: January 2018

Bugcrowd Ongoing program results
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Executive summary

Atlassian engaged Bugcrowd, Inc. to perform an Ongoing Bounty Program, commonly known as a crowd-sourced penetration test.

An Ongoing Bounty Program is a cutting-edge approach to an application assessment or penetration test. Traditional penetration tests use only one or two personnel to test an entire scope of work, while an Ongoing Bounty leverages a crowd of security researchers. This increases the probability of discovering esoteric issues that automated testing cannot find and that traditional vulnerability assessments may miss in the same testing period.

The purpose of this engagement was to identify security vulnerabilities in the targets listed in the targets and scope section. Once identified, each vulnerability was rated for technical impact defined in the findings summary section of the report.

This report shows testing for Atlassian's targets during the period of: 01/01/2018 – 01/31/2018.

For this Ongoing Program, submissions were received from 400 unique researchers.

The continuation of this document summarizes the findings, analysis, and recommendations from the Ongoing Bounty Program performed by Bugcrowd for Atlassian.
Reporting and methodology

Background
The strength of crowdsourced testing lies in multiple researchers, the pay-for-results model, and the varied methodologies that the researchers implement. To this end, researchers are encouraged to use their own individual methodologies on Bugcrowd Ongoing programs.

The workflow of every penetration test can be divided into the following four phases:

01 Reconnaissance
Gathering information before the attack

02 Enumeration
Finding attack vectors

03 Exploitation
Verifying security weaknesses

04 Documentation
Collecting results

Bugcrowd researchers who perform web application testing and vulnerability assessment usually subscribe to a variety of methodologies following the highlighted workflow, including the following:

[Image of various certification logos and a book cover]
Targets and scope

Scope
Prior to the Ongoing program launching, Bugcrowd worked with Atlassian to define the Rules of Engagement, commonly known as the program brief, which includes the scope of work. The following targets were considered explicitly in scope for testing:

- Any associated *.atlassian.io domain that can be exploited DIRECTLY from the *.atlassian.net instance
- Jira Cloud Mobile App for Android
- Jira Cloud Mobile App for iOS
- Confluence Cloud Mobile App for Android
- Confluence Cloud Mobile App for iOS
- JIRA (bugbounty-test-<bugcrowd-name>.atlassian.net)
- Confluence (bugbounty-test-<bugcrowd-name>.atlassian.net/wiki)
- JIRA Service Desk (bugbounty-test-<bugcrowd-name>.atlassian.net)
- Confluence Team Calendars (https://www.atlassian.com/software/confluence/team-calendars)
- Bitbucket Pipelines (https://bitbucket.org/product/features/pipelines)
- SourceTree (https://www.sourcetreeapp.com/)
- https://bitbucket.org/
- HipChat Data Center
- HipChat Mobile Client
- HipChat Desktop Client
- Crowd
- Crucible
- FishEye

All details of the program scope and full program brief can be reviewed in the Program Brief.
- Bamboo
- Bitbucket Server
- JIRA Service Desk
- Stride Desktop Client
- Confluence
- Stride Mobile Application for iOS
- JIRA Software
- Stride Mobile Application for Android
- JIRA Core
- *.atlassian.io subdomains that are used within the application
- Jira Portfolio
- Confluence Questions
- https://stride.video/<your-video>
- Stride (bugbounty-test-<bugcrowd-name>.atlassian.net)

**Team overview**
The following Bugcrowd team members were assigned to this program:

<table>
<thead>
<tr>
<th>TEAM ROLE</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Security Engineer</td>
<td>Jonathan Jay Turla</td>
</tr>
<tr>
<td>Application Security Engineer</td>
<td>Fatih Egbatan</td>
</tr>
<tr>
<td>Director of Security Operations</td>
<td>Ryan Black</td>
</tr>
<tr>
<td>Director of Operations</td>
<td>Abby Mulligan</td>
</tr>
</tbody>
</table>
Findings summary

Findings by severity
The following chart shows all valid assessment findings from the program by technical severity.
Risk and priority key

The following key is used to explain how Bugcrowd rates valid vulnerability submissions and their technical severity. As a trusted advisor Bugcrowd also provides common "next steps" for program owners per severity category.

<table>
<thead>
<tr>
<th>TECHNICAL SEVERITY</th>
<th>EXAMPLE VULNERABILITY TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRITICAL</td>
<td>● Remote Code Execution</td>
</tr>
<tr>
<td></td>
<td>● Vertical Authentication Bypass</td>
</tr>
<tr>
<td></td>
<td>● XML External Entities Injection</td>
</tr>
<tr>
<td></td>
<td>● SQL Injection</td>
</tr>
<tr>
<td></td>
<td>● Insecure Direct Object Reference for a critical function</td>
</tr>
</tbody>
</table>

Critical severity submissions (also known as "P1" or "Priority 1") are submissions that are escalated to Atlassian as soon as they are validated. These issues warrant the highest security consideration and should be addressed immediately. Commonly, submissions marked as Critical can cause financial theft, unavailability of services, large-scale account compromise, etc.

| HIGH               | ● Lateral authentication bypass |
|                   | ● Stored Cross-Site Scripting |
|                   | ● Cross-Site Request Forgery for a critical function |
|                   | ● Insecure Direct Object Reference for a important function |
|                   | ● Internal Server-Side Request Forgery |

High severity submissions (also known as "P2" or "Priority 2") are vulnerability submissions that should be slated for fix in the very near future. These issues still warrant prudent consideration but are often not availability or "breach level" submissions. Commonly, submissions marked as High can cause account compromise (with user interaction), sensitive information leakage, etc.

| MODERATE          | ● Reflected Cross-Site Scripting with limited impact |
|                   | ● Cross-Site Request Forgery for an important function |
|                   | ● Insecure Direct Object Reference for an unimportant function |
|                   | ● Internal Server-Side Request Forgery |

Moderate severity submissions (also known as "P3" or "Priority 3") are vulnerability submissions that should be slated for fix in the major release cycle. These vulnerabilities can commonly impact single users but require user interaction to trigger or only disclose moderately sensitive information.

| LOW                | ● Cross-Site Scripting with limited impact |
|                   | ● Cross-Site Request Forgery for an unimportant function |
|                   | ● External Server-Side Request Forgery |

Low severity submissions (also known as "P4" or "Priority 4") are vulnerability submissions that should be considered for fix within the next six months. These vulnerabilities represent the least danger to confidentiality, integrity, and availability.

| INFORMATIONAL      | ● Lack of code obfuscation |
|                   | ● Autocomplete enabled |
|                   | ● Non-exploitable SSL issues |

Informational submissions (also known as "P5" or "Priority 5") are vulnerability submissions that are valid but out-of-scope or are "won’t fix" issues, such as best practices.

Bugcrowd’s Vulnerability Rating Taxonomy

More detailed information regarding our vulnerability classification can be found at: [https://bugcrowd.com/vrt](https://bugcrowd.com/vrt)
Appendix

Included in this appendix are auxiliary metrics and insights into the Ongoing program. This includes information regarding submissions over time, payouts and prevalent issue types.

Submissions over time
The timeline below shows submissions received and validated by the Bugcrowd team:

![Submissions Over Time Graph]

<table>
<thead>
<tr>
<th>SUBMISSION OUTCOME</th>
<th>COUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>16</td>
</tr>
<tr>
<td>Invalid</td>
<td>43</td>
</tr>
<tr>
<td>Duplicate</td>
<td>4</td>
</tr>
<tr>
<td>Processing</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>64</strong></td>
</tr>
</tbody>
</table>

Submissions signal
A total of 64 submissions were received, with 16 unique valid issues discovered. Bugcrowd identified 4 duplicate submissions, removed 43 invalid submissions, and is processing 1 submissions. The ratio of unique valid submissions to noise was 25%.
Bug types overview
The distribution of submissions across bug types for the Ongoing program is shown below.
Introduction
This report shows testing of Atlassian between the dates of 01/01/2018 - 01/31/2018 this Ongoing Bounty Program was performed by Bugcrowd Inc. During this time, 400 researchers from Bugcrowd submitted a total of 64 vulnerability submissions against Atlassian’s targets. The purpose of this assessment was to identify security issues that could adversely affect the integrity of Atlassian. Testing focused on the following:

1. Any associated *.atlassian.io domain that can be exploited DIRECTLY from the *.atlassian.net instance
2. Jira Cloud Mobile App for Android
3. Jira Cloud Mobile App for iOS
4. Confluence Cloud Mobile App for Android
5. Confluence Cloud Mobile App for iOS
6. JIRA (bugbounty-test<-bugcrowd-name>.atlassian.net)
7. Confluence (bugbounty-test<-bugcrowd-name>.atlassian.net/wiki)
8. JIRA Service Desk (bugbounty-test<-bugcrowd-name>.atlassian.net)
11. SourceTree (https://www.sourcetreeapp.com/)
12. https://bitbucket.org/
13. HipChat Data Center
14. HipChat Mobile Client
15. HipChat Desktop Client
16. Crowd
17. Crucible
18. FishEye
19. Bamboo
20. Bitbucket Server
21. Jira Service Desk
22. Stride Desktop Client
23. Confluence
24. Stride Mobile Application for iOS
25. JIRA Software
26. Stride Mobile Application for Android
27. JIRA Core
28. *.atlassian.io subdomains that are used within the application
29. Jira Portfolio
The assessment was performed under the guidelines provided in the statement of work between Atlassian and Bugcrowd. This letter provides a high-level overview of the testing performed, and the result of that testing.

Ongoing Program Overview
An Ongoing Program is a novel approach to a penetration test. Traditional penetration tests use only one or two researchers to test an entire scope of work, while an Ongoing Program leverages a crowd of security researchers. This increases the probability of discovering esoteric issues that automated testing cannot find and that traditional vulnerability assessments may miss, in the same testing period.

It is important to note that this document represents a point-in-time evaluation of security posture. Security threats and attacker techniques evolve rapidly, and the results of this assessment are not intended to represent an endorsement of the adequacy of current security measures against future threats. This document contains information in summary form and is therefore intended for general guidance only; it is not intended as a substitute for detailed research or the exercise of professional judgment. The information presented here should not be construed as professional advice or service.

Testing Methods
This security assessment leveraged researchers that used a combination of proprietary, public, automated, and manual test techniques throughout the assessment. Commonly tested vulnerabilities include code injection, cross-site request forgery, cross-site scripting, insecure storage of sensitive data, authorization/authentication vulnerabilities, business logic vulnerabilities, and more.

Summary of Findings
During the engagement, Bugcrowd discovered the following:

- 0 critical vulnerabilities
- 5 high vulnerabilities
- 10 moderate vulnerabilities
- 1 low severity vulnerability
- 0 informational findings