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**for Scientific, Non-Profit, Non-Commercial Purposes**

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Hereinafter UNITN by means of

|  |  |  |
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| Fabio Massacci  (Professor) |  | Niculae Sebe  (Head of Department) |
| UNITN PROVIDING SCIENTIST |  | UNITN REPRESENTATIVE |

* Hereby grants a free non-exclusive non-transferable license for the Security Dataset(s)
* (delete as appropriate)
  + NVD-EDB-EKITS-SYM
  + FFV-GCV-IEV-ASV
  + ESEJ
* to:

DEPARTMENT, ORGANIZATION  
ADDRESS, COUNTRY

Hereinafter RECIPIENT by means of

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| --- | --- | --- |
| Name  (Position) |  | Name  (Position) |
| RECIPIENT SCIENTIST(S) |  | RECIPIENT REPRESENTATIVE |

Under the terms and conditions stated herein:

1. **The RECIPIENT asks rights to access the DATASETS mentioned above among the following ones**

* **NVD**: is the reference database for the population of vulnerabilities. It collects the data from the National Vulnerability Database from NIST.[[1]](#footnote-1)
* **EDB** is the reference database for public (proof-of-concept) exploits. It collects the data from the Exploit-DB web site.
  + **EDB-files** contains all actual exploits referenced in EDB, categorized by platform.
* **EKITS** is a database of vulnerabilities and exploits traded in the black markets. We have built an update infrastructure that allows us to keep our database well ahead of any public source on such vulnerabilities publicly available (such as Contagio's Exploit Pack Table).
* **SYM** is a database of vulnerabilities exploited in the wild as reported by Symantec's sensors worldwide. This dataset is a collection of publicly available vulnerability data through Symantec's [*Threat Explorer*](http://www.symantec.com/security_response/landing/threats.jsp) and [Attack Signatures](http://www.symantec.com/security_response/attacksignatures/) websites.
* **FFV** collects the vulnerabilities of the Firefox browser. It is the most comprehensive database. It integrates the Mozilla Foundation Security Advisory (MFSA) bulletin, the Mozilla Bugzilla bugtracker and the NVD.
* **GCV** reports the vulnerabilities of the Google Chrome Browser extracted from Chrome Issue Tracker, integrated with the NVD to reconstruct affected versions and checked for consistency with the code distribution. It does not include all vulnerabilities of the browser as some of the third party software such as WebKit are only partly included.
* **IEV** lists the vulnerabilities for Internet Explorer extracted from the Microsoft Security Bulletin and integrated with the NVD to reconstruct affected versions.
* **ASV** Vulnerabilities of the Apple Safari Web Browser extracted from the Apple Knowledge Base and integrated with the NVD to reconstruct affected versions.
* **ESEJ** is thelist of vulnerabilities in Google Chrome and Mozilla Firefox along with ranges of major versions affected by each vulnerability. For each vulnerability, the dataset contains two affected version ranges: (1) vulnerable versions according to the NVD; (2) vulnerable versions based on the vulnerable code evidence (identified by our algorithm).

A description of the tables and entries in of the DATASETS is provided as ANNEX A.

1. The RECIPENT intends to use the dataset for the following scientific, non-profit, non-commercial purposes

**Write here the broad goal of the research**

The RECIPENT agrees that such purposes, the name of the RECIPIENT’s scientist(s) and affiliation, and any publications by the RECIPIENT that uses the DATASETS will be listed by UNITN on the web site http://security-data.disi.unitn.it.

1. "MODIFICATIONS" of DATASETS is software or database tables or database columns created by RECIPIENT which contains/incorporates DATASETS or a part thereof or SQL code and data table values of DATASETS or a part thereof.
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   1. **NVD, EDB, EKITS, SYM:**
      1. **Luca Allodi and Fabio Massacci. 2014. Comparing Vulnerability Severity and Exploits Using Case-Control Studies. *ACM Transactions on Information and System Security*. 17(1), 20pp, 2014. DOI=10.1145/2630069**
      2. Its preliminary version whenever historical attribution is important:
         1. Luca Allodi and Fabio Massacci. 2012. A preliminary analysis of vulnerability scores for attacks in wild: the ekits and sym datasets. In *Proc. of the 2012 ACM Workshop* BADGERS '12. DOI=10.1145/2382416.2382427
   2. **FFV, IEV, ASV, GCV:**
      1. **Fabio Massacci and Viet Hung Nguyen. An Empirical Methodology to Evaluate Vulnerability Discovery Models. *IEEE Transactions on Software Engineering* 40(12):1147-1162, 2014. DOI=10.1109/TSE.2014.2354037**
      2. Its preliminary versions whenever historical attribution is important:
         1. Fabio Massacci, Stephan Neuhaus, Viet Hung Nguyen. After-Life Vulnerabilities: A Study on Firefox Evolution, its Vulnerabilities and Fixes. In *Proc. of the 3rd Int. Symp. on Engineering Secure Software and Systems (ESSoS’11)*, 2011. Springer Verlag. DOI=10.1007/9783642191251.
         2. Viet Hung Nguyen, Fabio Massacci. An Independent Validation of Vulnerability Discovery Models. In *Proc. of the 7th ACM Symp. ASIACCS’12,* 2012. DOI=10.1145/2414456.2414458.
   3. **ESEJ:**
      1. **Viet Hung Nguyen, Stanislav Dashevskyi, Fabio Massacci. 2015. An Automatic Method for Assessing the Versions Affected by a Vulnerability. In *Empirical Software Engineering* (to appear). DOI=10.1007/s10664-015-9408-2**
      2. Its preliminary version whenever historical attribution is important:
         1. Viet Hung Nguyen, Fabio Massacci. The (Un)Reliability of Vulnerable Version Data of NVD: an Empirical Experiment on Chrome Vulnerabilities. In *Proc. of the 8th ACM Symp. ASIACCS’13*, 2013. DOI=10.1145/2484313.2484315.

The RECIPIENT undertakes to notify UNITN of the existence of the publication by email at [security-data@disi.unitn.it](mailto:security-data@disi.unitn.it).

1. It is the responsibility of the RECIPIENT to read the articles mentioned in Article 6 in order to understand the scientific limitations of the DATASETS.
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2. Where the research involving DATASETS results in an invention or patentable MODIFICATION of DATASETS, RECIPIENT and its Researcher/s shall promptly disclose this development to UNITN. RECIPIENT and UNITN shall decide in common about the inventorship, taking due consideration UNITN's contribution to the invention through DATASETS. Decisions about further proceedings, such as filing of a patent application or exploitation, shall be made after inventorship is determined.
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|  |  |  |
| Date and signature | Stamp of the Organization | Date and signature |

|  |  |  |
| --- | --- | --- |
| Name  (Positions) |  | Name  (Position) |
| RECIPIENT SCIENTIST(S) |  | RECIPIENT REPRESENTATIVE |
|  |  |  |
| Date and signature | Stamp of the Organization | Date and signature |

**ANNEX A – DATASETS TABLES AND ATTRIBUTES**

1. **NVD** Note that each entry in the NVD dataset **does not correspond to a vulnerability**. A vulnerability ID can be associated with more than one software or vendor. The same ID can be reported in different tuples.
   1. **CVE\_ID:** Id of the vulnerability.
   2. **Pub\_date:** First publication date of the vulnerability
   3. **Mod\_date:**  Date of last update to the entry
   4. **CVSS\_score:** CVSS v2.0 Risk Score of the vulnerability
   5. **CVSS\_Imp:** CVSS v2.0 Impact score of the vulnerability
   6. **CVSS\_Expl:** CVSS v2.0 Exploitability score of the vulnerability
   7. **CVSS\_AV:** CVSS Exploitability assessment: Access Vector
   8. **CVSS\_AC:** CVSS Exploitability assessment: Access Complexity
   9. **CVSS\_Au:** CVSS Exploitability assessment: Authentication
   10. **CVSS\_Conf:** CVSS Impact assessment: Confidentiality
   11. **CVSS\_Integ:** CVSS Impact assessment: Integrity
   12. **CVSS\_Avail:** CVSS Impact assessment: Availability
   13. **Aff\_Sw:** Software affected by the vulnerability
   14. **Vendor:** Vendor of the software
   15. **Description:** English description of vulnerability

**2. EDB  
(\*) in EDB-files only**

1. **E-id:** Exploit-DB record ID
2. **Cve-id:** CVE\_ID of vulnerability to which the exploit refers
3. **Date:** date of emission of exploit
4. **Osvb-id:** ID to third-party vulnerability database: OSVDB
5. **(\*) File:** Path to the exploit
6. **Description:** Description of exploit
7. **Author:** name of the researcher who published the exploit
8. **Platform:** operating system of the vulnerability/exploit
9. **Type:** type of exploit (e.g. remote, webapp, denial-of-service)
10. **Port:** remote access port to the vulnerability as reached by the exploit (iff *type==remote*)

**3. EKITS**

1. **Ek\_id:** Id of exploit kit
2. **E\_name:** exploit kitname
3. **Version:** version of exploit kit
4. **Date:**  date of release of exploit kit on the black markets (month)
5. **Price:** advertised price
6. **Per:** license duration (year,month,week)
7. **Service1:** Services sold alongside the product (not available for all ekits)
8. **Service2:** Services sold alongside the product (not available for all ekits)
9. **Service3:** Services sold alongside the product (not available for all ekits)
10. **Cve\_id:** CVE\_ID of vulnerability exploited by the kit
11. **P\_source:** primary source of information
12. **S\_source:** secondary source
13. **Notes:** english notes on the ekit/advertisement/services

**4. SYM (malware + network attacks)**

1. **attack\_ID:**  ID of attack referenced by Symantec (network attacks table)
2. **threat\_ID:** ID of malware referenced by Symantec (malware table)
3. **Type:** where in the text the vulnerability is mentioned (i.e. description of attack or references)
4. **CVE:** CVE\_ID of vulnerability
5. **String:** name of to the attack on Symantec’s website

**5. FFV**

* 1. **bugID:** the identifier of a bug responsible for this vulnerability.
  2. **cve:** the identifier of an CVE entry referring to this vulnerability.
  3. **mfsa:** the identifier of an MFSA entry referring to this vulnerability.
  4. **bugDate:** the date when the corresponding bug is filed to Bugzilla.
  5. **cveDate:** the date that the corresponding CVE is filed to NVD.
  6. **minVersion:** the earliest major version that this vulnerability affects to.
  7. **maxVersion:** the latest major version that this vulnerability affects to.

**6. GCV**

1. **bugID:** the identifier of a bug responsible for this vulnerability.
2. **cve:** the identifier of an CVE entry referring to this vulnerability.
3. **bugDate:** the date when the corresponding bug is filed to ChromeIssueTracker.
4. **cveDate:** the date that the corresponding CVE is filed to NVD.
5. **minVersion:** the earliest major version that this vulnerability affects to.
6. **maxVersion:** the latest major version that this vulnerability affects to.
7. **codeMinVersion:** the earliest major version where the vulnerable code footprint is found.
8. **codeMaxVersion:** the latest major version where the vulnerable code footprint is found.

**7. IEV**

1. **cve:** the identifier of an CVE entry referring to this vulnerability.
2. **mssb:** the identifier of an MS Security Bulletin entry referring to this vulnerability.
3. **cveDate:** the date that the corresponding CVE is filed to NVD.
4. **minVersion:** the earliest major version that this vulnerability affects to.
5. **maxVersion:** the latest major version that this vulnerability affects to.

**8. ASV**

1. **cve:** the identifier of an CVE entry referring to this vulnerability.
2. **akb:** the identifier of an Apple Knowledge Base entry referring to this vulnerability.
3. **cveDate:** the date that the corresponding CVE is filed to NVD.
4. **minVersion:** the earliest major version that this vulnerability affects to.
5. **maxVersion:** the latest major version that this vulnerability affects to.

**8. ESEJ**

**a. cve:** the identifier of a CVE entry refferring to this vulnerability.

**b. bugID:** the identifier of a bug responsible for this vulnerability (Bugzilla or Chrome issue tracker).

**c. cveDate:** the date that the corresponding CVE is filed to the NVD.

**d. minVer:** the earliest major version that this vulnerability affects.

**e. maxVer:** the latest major version that this vulnerability affects.

**f. bugFix:** the bug fix commit that was successfully located.

**g. esminVer:** the earliest major version that this vulnerability affects, according to the code evidence identified by our algorithm.

**h. esmaxVer:** the latest major version that this vulnerability affects, according to the code evidence identified by our algorithm.

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[**http://security-data.disi.unitn.it**](http://security-data.disi.unitn.it)with your name and affiliation**;**

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1. [↑](#footnote-ref-1)