CWE Coverage *Claims* Schema

a (brief) proposal

a call for *action*

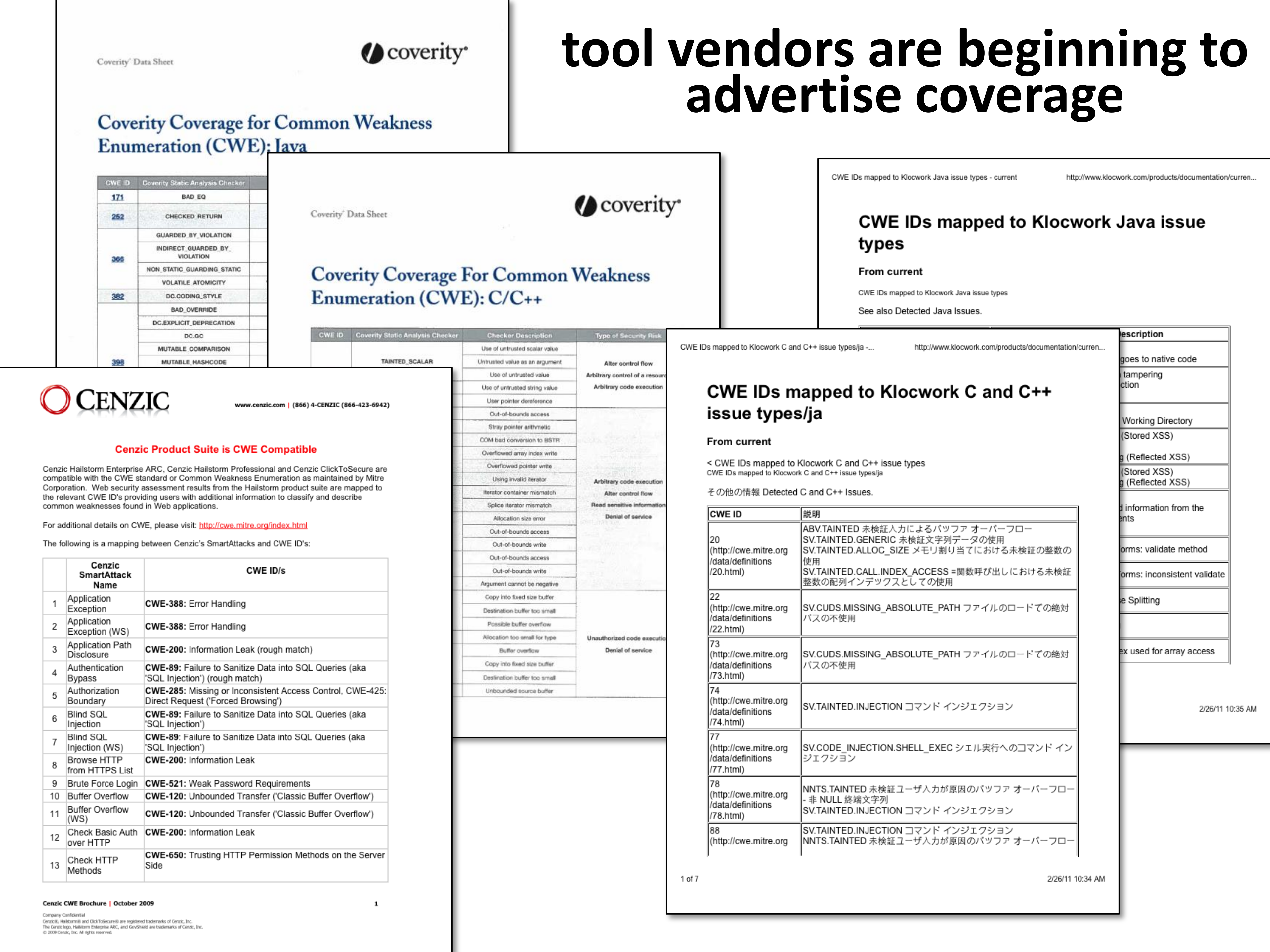
a success story

682 CWE’s defined

29 companies declaring compatibility

of **49** products & services

tool vendors are beginning to advertise coverage



Coverity Data Sheet

coverity

Coverity Coverage for Common Weakness Enumeration (CWE): Java

CWE ID	Coverity Static Analysis Checker
171	BAD_EQ
252	CHECKED_RETURN
366	GUARDED_BY_VIOLATION
	INDIRECT_GUARDED_BY_ VIOLATION
	NON_STATIC_GUARDING_STATIC
	VOLATILE_ATOMICITY
382	DC.CODING_STYLE
398	BAD_OVERRIDE
	DC.EXPLICIT_DEPRECATION
	DC.GC
	MUTABLE_COMPARISON
	MUTABLE_HASHCODE

Coverity Data Sheet

coverity

Coverity Coverage For Common Weakness Enumeration (CWE): C/C++

CWE ID	Coverity Static Analysis Checker	Checker Description	Type of Security Risk
	TAINTED_SCALAR	Use of untrusted scalar value	Alter control flow Arbitrary control of a resour Arbitrary code execution
		Untrusted value as an argument	
		Use of untrusted value	
		Use of untrusted string value	
		User pointer dereference	
		Out-of-bounds access	Arbitrary code execution Alter control flow Read sensitive information Denial of service
		Stray pointer arithmetic	
		COM bad conversion to BSTR	
		Overflowed array index write	
		Overflowed pointer write	
		Using invalid iterator	
		Iterator container mismatch	
		Splice iterator mismatch	
		Allocation size error	
		Out-of-bounds access	
		Out-of-bounds write	
		Out-of-bounds access	
		Out-of-bounds write	
		Argument cannot be negative	
		Copy into fixed size buffer	Unauthorized code executio Denial of service
		Destination buffer too small	
		Possible buffer overflow	
		Allocation too small for type	
		Buffer overflow	
		Copy into fixed size buffer	
		Destination buffer too small	
		Unbounded source buffer	

CENZIC

www.cenzic.com | (866) 4-CENZIC (866-423-6942)

Cenzic Product Suite is CWE Compatible

Cenzic Hailstorm Enterprise ARC, Cenzic Hailstorm Professional and Cenzic ClickToSecure are compatible with the CWE standard or Common Weakness Enumeration as maintained by Mitre Corporation. Web security assessment results from the Hailstorm product suite are mapped to the relevant CWE ID's providing users with additional information to classify and describe common weaknesses found in Web applications.

For additional details on CWE, please visit: http://cwe.mitre.org/index.html

The following is a mapping between Cenzic's SmartAttacks and CWE ID's:

	Cenzic SmartAttack Name	CWE ID/s
1	Application Exception	**CWE-388:** Error Handling
2	Application Exception (WS)	**CWE-388:** Error Handling
3	Application Path Disclosure	**CWE-200:** Information Leak (rough match)
4	Authentication Bypass	**CWE-89:** Failure to Sanitize Data into SQL Queries (aka 'SQL Injection') (rough match)
5	Authorization Boundary	**CWE-285:** Missing or Inconsistent Access Control, CWE-425: Direct Request ('Forced Browsing')
6	Blind SQL Injection	**CWE-89:** Failure to Sanitize Data into SQL Queries (aka 'SQL Injection')
7	Blind SQL Injection (WS)	**CWE-89:** Failure to Sanitize Data into SQL Queries (aka 'SQL Injection')
8	Browse HTTP from HTTPS List	**CWE-200:** Information Leak
9	Brute Force Login	**CWE-521:** Weak Password Requirements
10	Buffer Overflow	**CWE-120:** Unbounded Transfer ('Classic Buffer Overflow')
11	Buffer Overflow (WS)	**CWE-120:** Unbounded Transfer ('Classic Buffer Overflow')
12	Check Basic Auth over HTTP	**CWE-200:** Information Leak
13	Check HTTP Methods	**CWE-650:** Trusting HTTP Permission Methods on the Server Side

Cenzic CWE Brochure | October 2009 1

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CWE IDs mapped to Klocwork Java issue types - current http://www.klocwork.com/products/documentation/curren...

CWE IDs mapped to Klocwork Java issue types

From current

CWE IDs mapped to Klocwork Java issue types

See also Detected Java Issues.

escription
goes to native code
tampering ction
Working Directory
(Stored XSS) g (Reflected XSS)
(Stored XSS) g (Reflected XSS)
d information from the ents
orms: validate method
orms: inconsistent validate
e Splitting
ex used for array access

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CWE IDs mapped to Klocwork C and C++ issue types/ja -... http://www.klocwork.com/products/documentation/curren...

CWE IDs mapped to Klocwork C and C++ issue types/ja

From current

< CWE IDs mapped to Klocwork C and C++ issue types
CWE IDs mapped to Klocwork C and C++ issue types/ja

その他の情報 Detected C and C++ Issues.

CWE ID	説明
20 (http://cwe.mitre.org /data/definitions /20.html)	ABV.TAINTED 未検証入力によるバッファ オーバーフロー SV.TAINTED.GENERIC 未検証文字列データの使用 SV.TAINTED.ALLOC_SIZE メモリ割り当てにおける未検証の整数の使用 SV.TAINTED.CALL.INDEX_ACCESS =関数呼び出しにおける未検証整数の配列インデックスとしての使用
22 (http://cwe.mitre.org /data/definitions /22.html)	SV.CUDS.MISSING_ABSOLUTE_PATH ファイルのロードでの絶対パスの不使用
73 (http://cwe.mitre.org /data/definitions /73.html)	SV.CUDS.MISSING_ABSOLUTE_PATH ファイルのロードでの絶対パスの不使用
74 (http://cwe.mitre.org /data/definitions /74.html)	SV.TAINTED.INJECTION コマンド インジェクション
77 (http://cwe.mitre.org /data/definitions /77.html)	SV.CODE_INJECTION.SHELL_EXEC シェル実行へのコマンド インジェクション
78 (http://cwe.mitre.org /data/definitions /78.html)	NNTS.TAINTED 未検証ユーザ入力が原因のバッファ オーバーフロー - 非 NULL 終端文字列 SV.TAINTED.INJECTION コマンド インジェクション
88 (http://cwe.mitre.org	SV.TAINTED.INJECTION コマンド インジェクション NNTS.TAINTED 未検証ユーザ入力が原因のバッファ オーバーフロー

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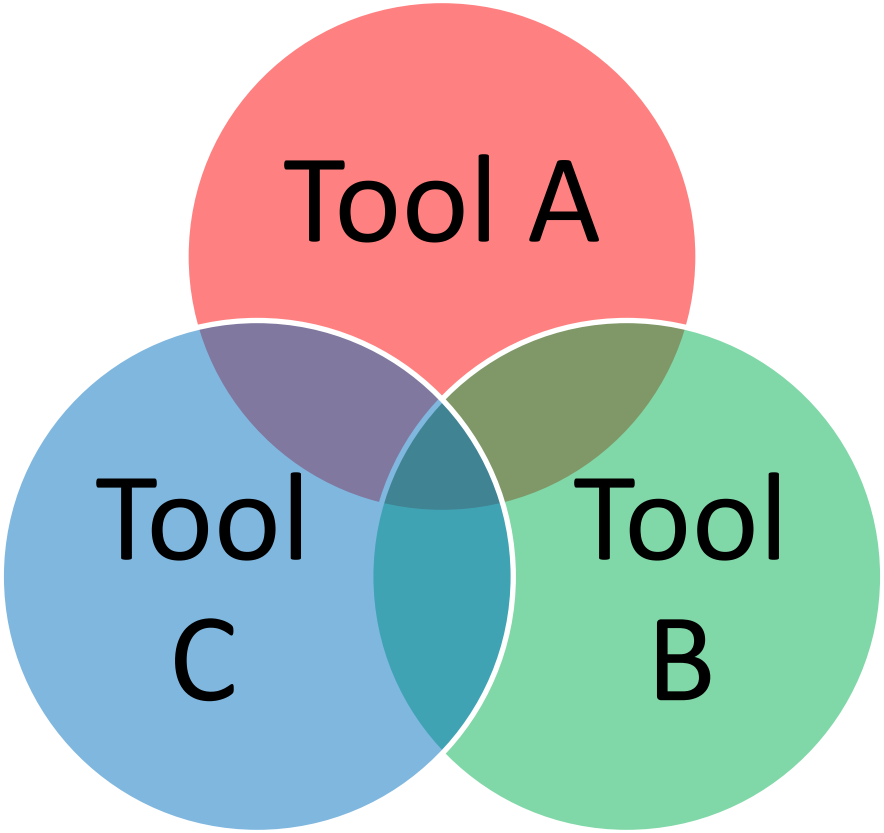
a (relatively) simple idea…

lightweight and
define a ^standard way

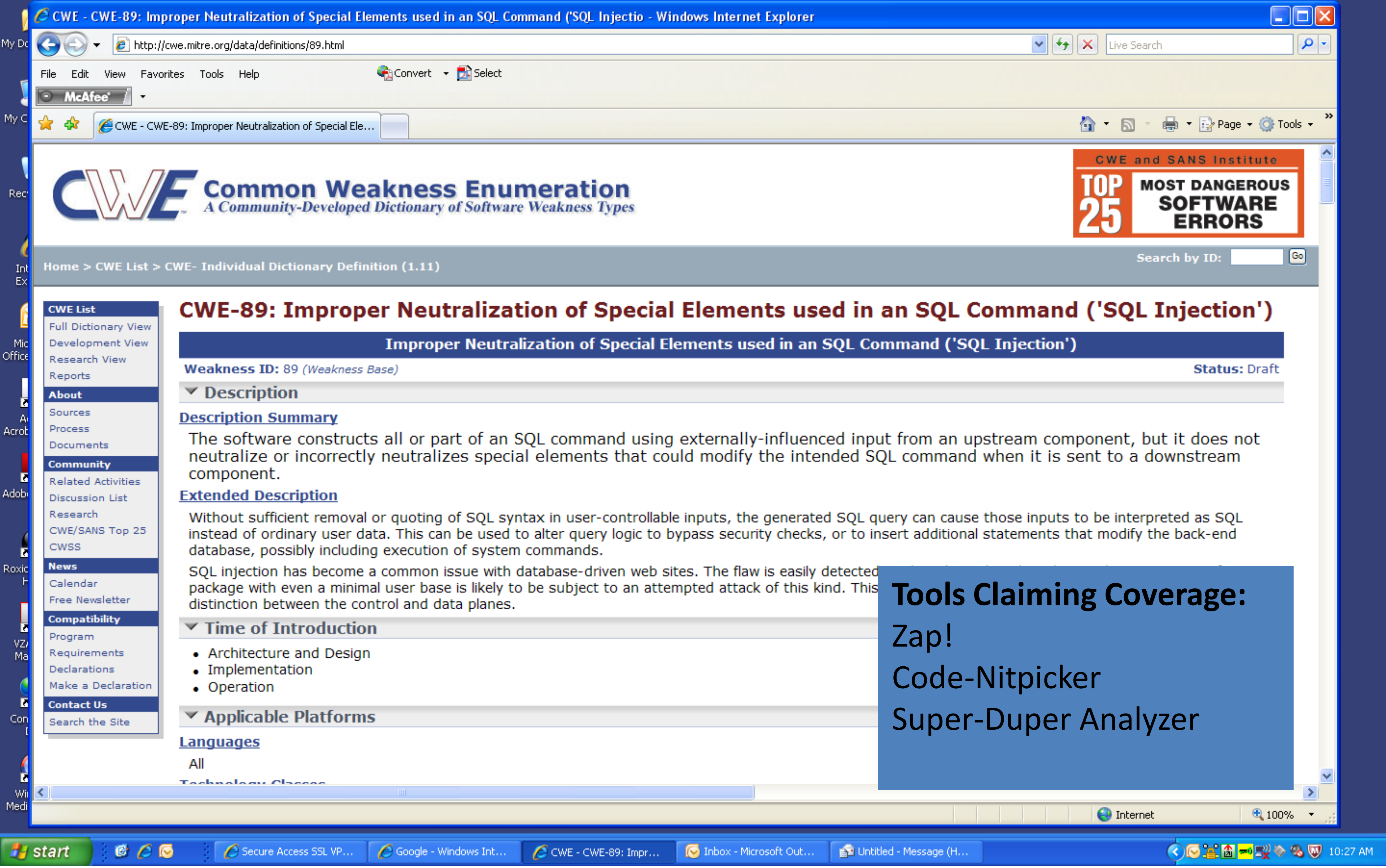
to represent CWE coverage *claims*

some reasons…

why do we need a standard representation?



to make it easy to compute coverage



CWE Common Weakness Enumeration

A Community-Developed Dictionary of Software Weakness Types

Home > CWE List > CWE- Individual Dictionary Definition (1.11)

CWE-89: Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')

Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')

Weakness ID: 89 *(Weakness Base)* **Status:** Draft

Description

Description Summary

The software constructs all or part of an SQL command using externally-influenced input from an upstream component, but it does not neutralize or incorrectly neutralizes special elements that could modify the intended SQL command when it is sent to a downstream component.

Extended Description

Without sufficient removal or quoting of SQL syntax in user-controllable inputs, the generated SQL query can cause those inputs to be interpreted as SQL instead of ordinary user data. This can be used to alter query logic to bypass security checks, or to insert additional statements that modify the back-end database, possibly including execution of system commands.

SQL injection has become a common issue with database-driven web sites. The flaw is easily detected package with even a minimal user base is likely to be subject to an attempted attack of this kind. This distinction between the control and data planes.

Time of Introduction

- Architecture and Design
- Implementation
- Operation

Applicable Platforms

Languages

All

Technology Classes

Tools Claiming Coverage:

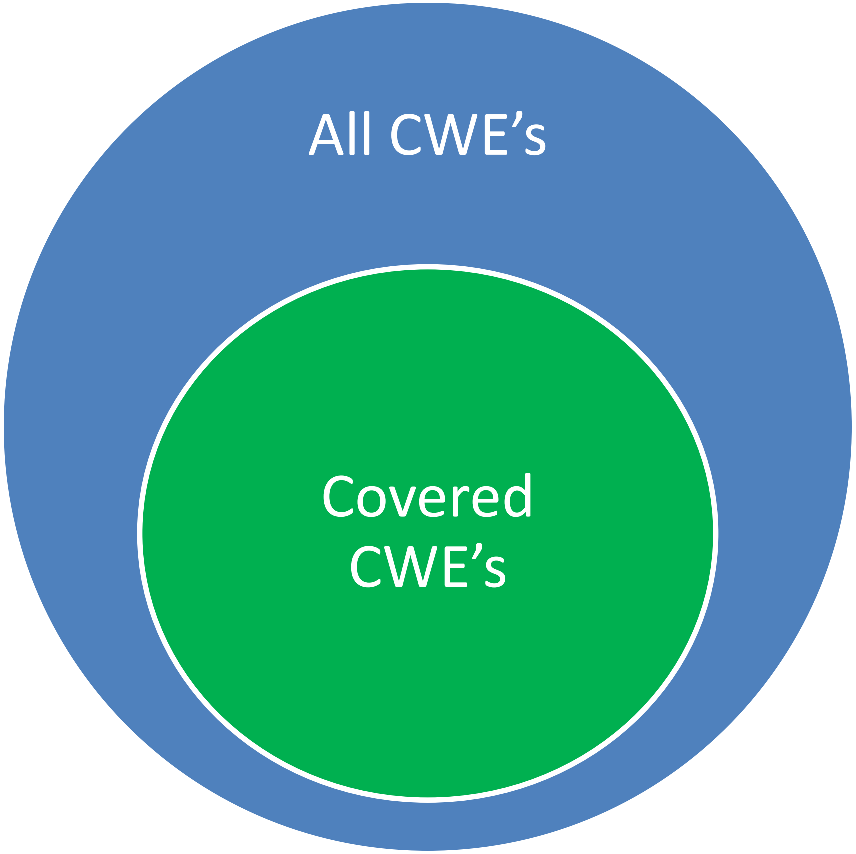
Zap!

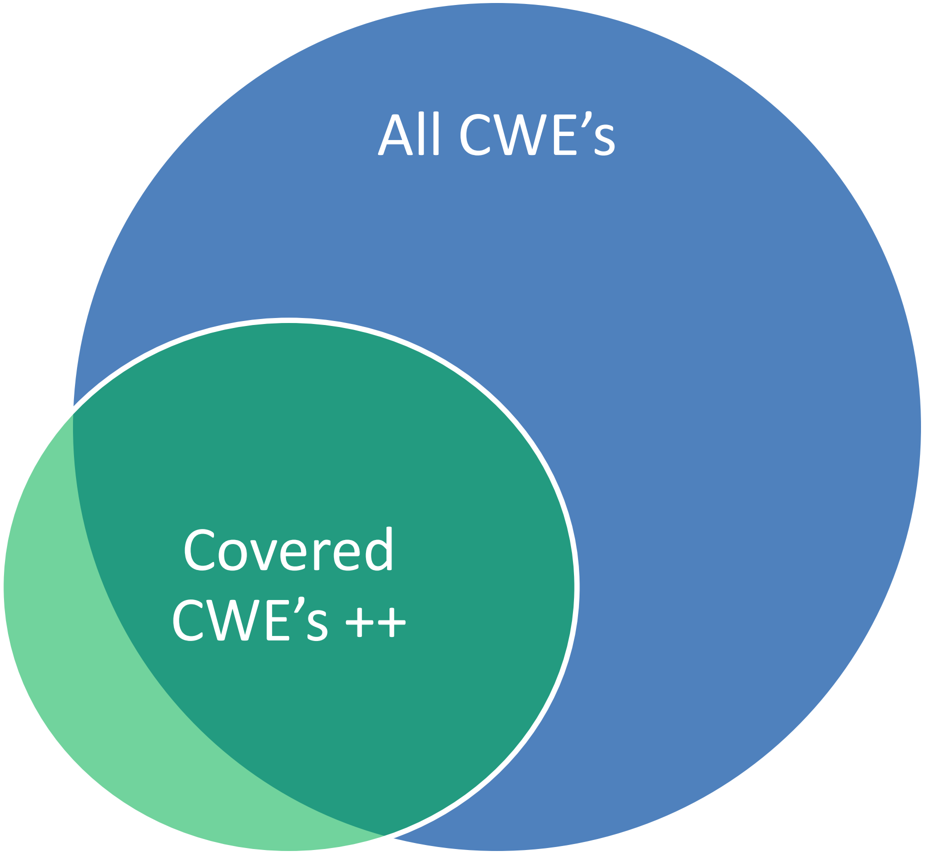
Code-Nitpicker

Super-Duper Analyzer

help CWE users

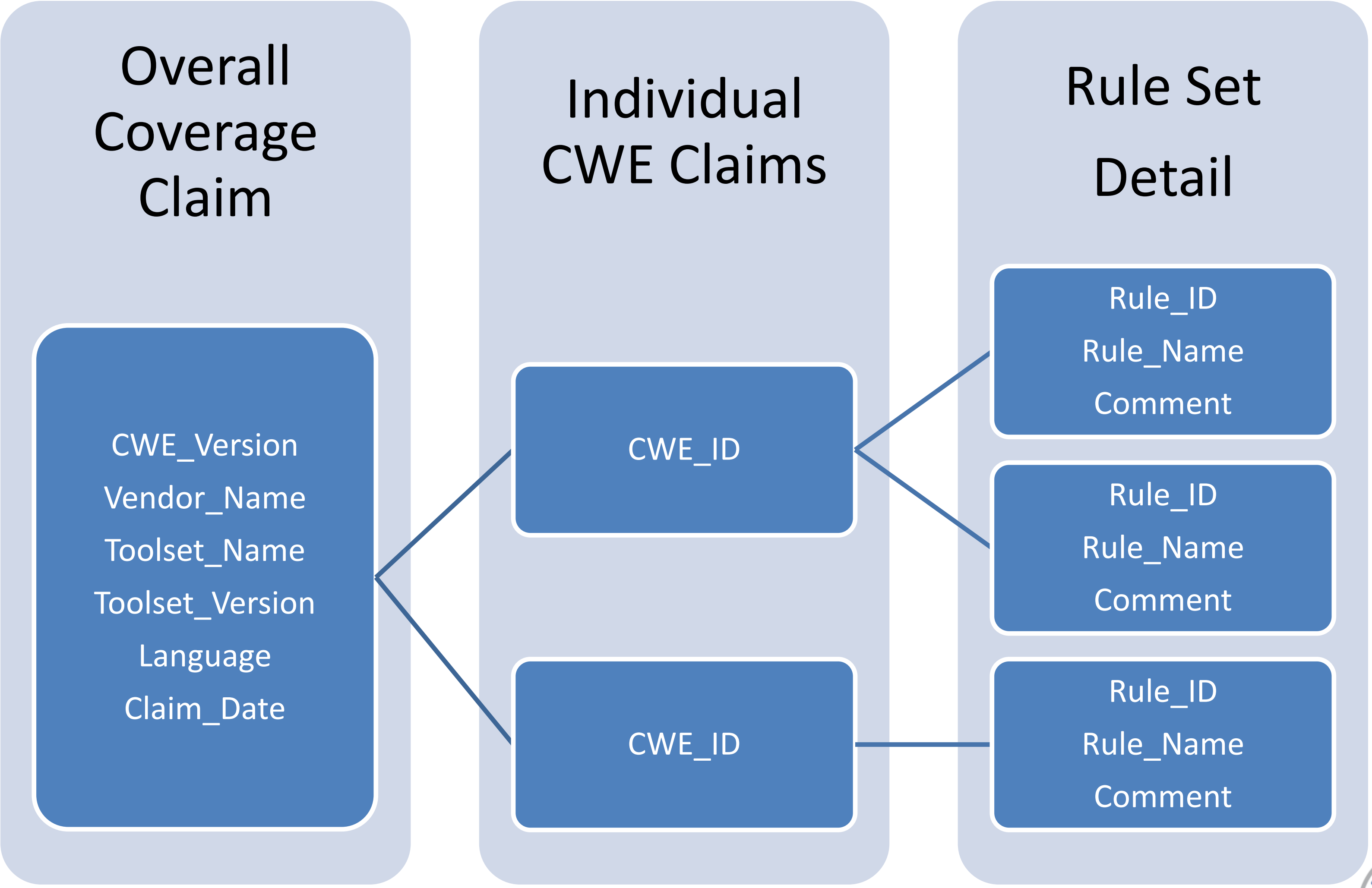
to see where R&D might be needed

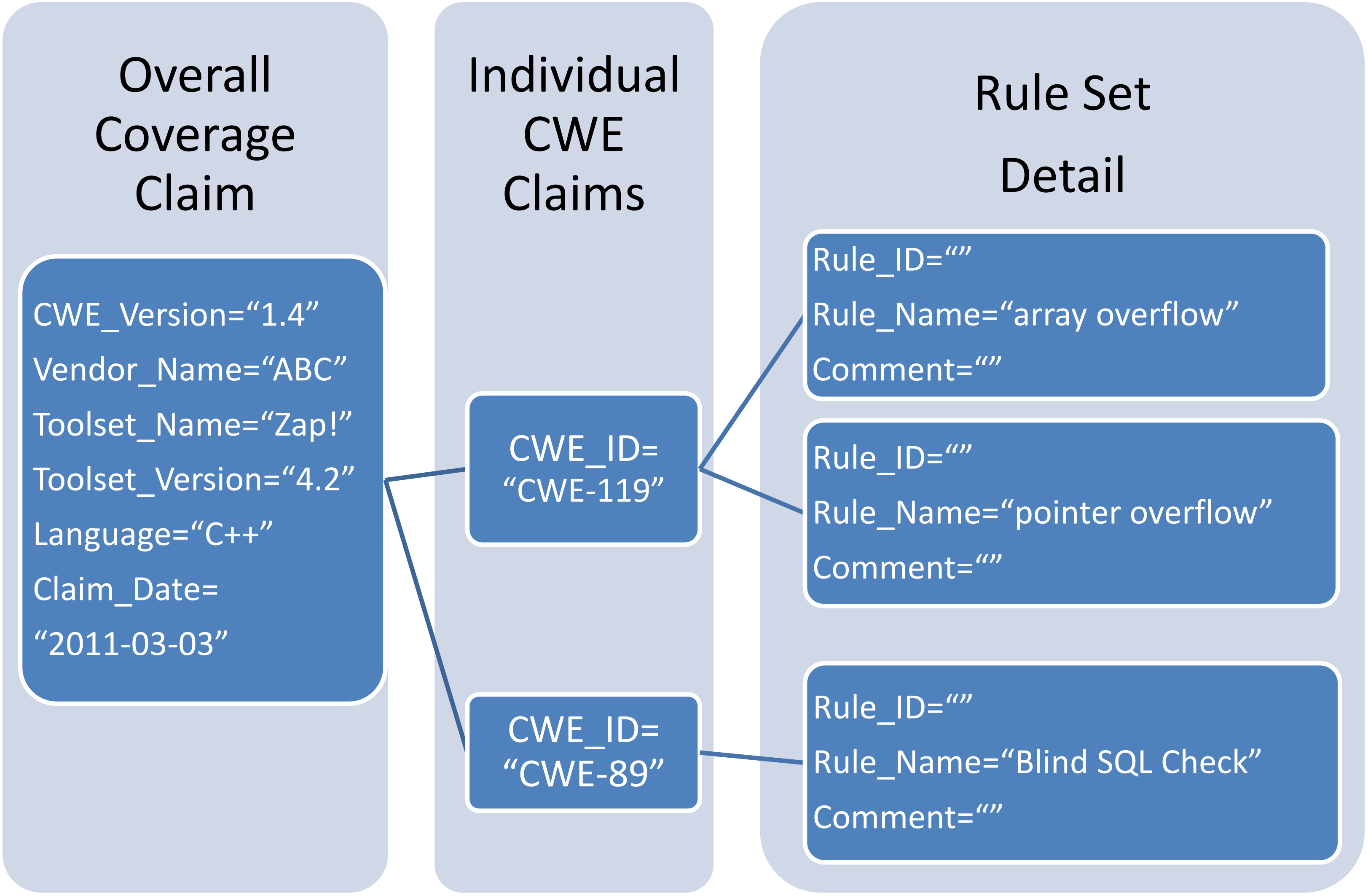




to see where CWE may need to grow

the general idea





Overall Coverage Claim

CWE_Version="1.4"

Vendor_Name="ABC"

Toolset_Name="Zap!"

Toolset_Version="4.2"

Language="C++"

Claim_Date=

"2011-03-03"

Individual CWE Claims

CWE_ID=
"CWE-119"

CWE_ID=
"CWE-89"

Rule Set

Detail

Rule_ID=""

Rule_Name="array overflow"

Comment=""

Rule_ID=""

Rule_Name="pointer overflow"

Comment=""

Rule_ID=""

Rule_Name="Blind SQL Check"

Comment=""

something more concrete

services vs. tools

the are many open issues

specificity of claims

CWE compatibility program

disclaimers

dynamic vs. static analysis

we need input from the community

the action part

today: starting point for discussion

consensus draft @ June WG

input from users

goals

input from vendors

Richard.Struse@dhs.gov

thank you.