

Rapid Product Security Incident Response Using a Workflow Based Solution

Diane Mickelson, dmickel@us.ibm.com

Rod Henderson, rodhende@us.ibm.com



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Agenda

- IBM PSIRT
- Tooling Design Challenge
- Workflow-Based PSIRT
- PSIRT Demo

IBM PSIRT



IBM PSIRT Roles

Main players



PSIRT Operations – Oversees PSIRT Tool and compliance



Product Responder – Performs detailed analysis and creates remediation plan



Brand Lead – Monitors actions of Brand team to ensure activity and progress

Pillar Lead – Oversees vulnerability assessments performed by the Product Teams



Scorer (IBM X-Force) – Determines severity of the vulnerability and provides both the [Common Vulnerability Scoring System \(CVSS\)](#) details and the [Common Vulnerability and Exposure \(CVE\)](#)

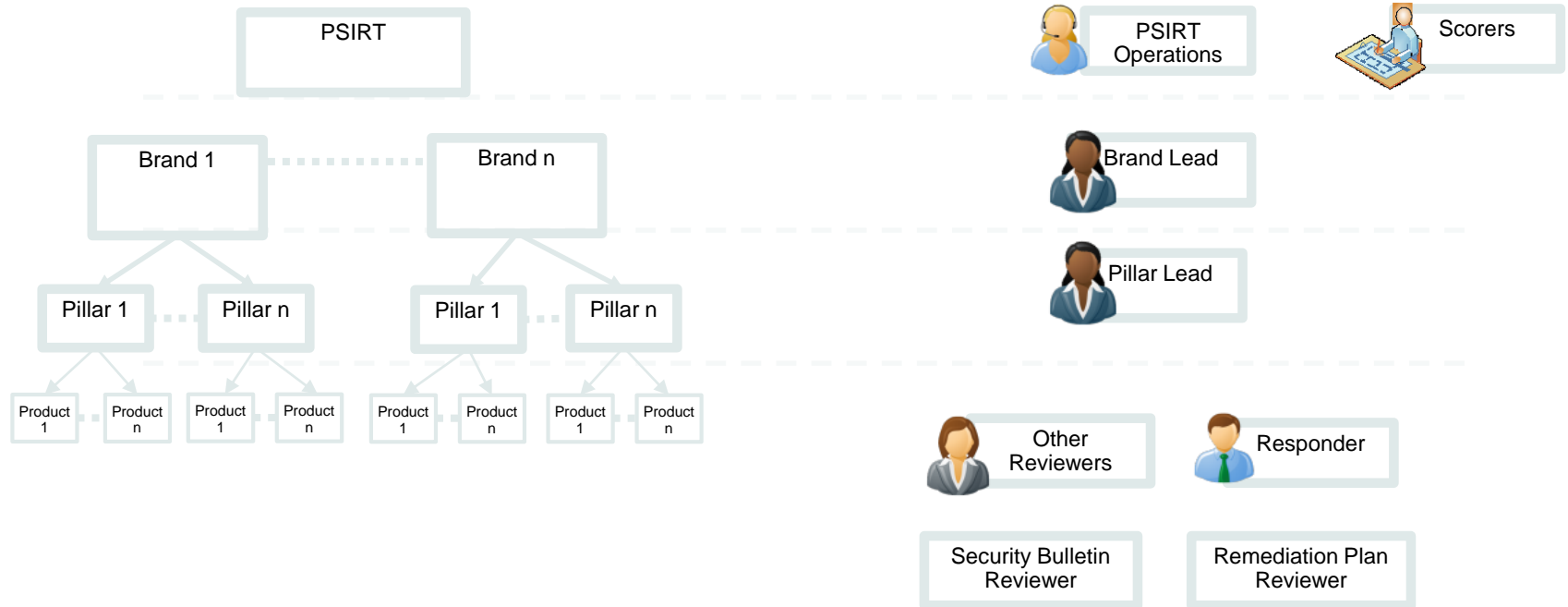


Other Reviewers

PSIRT users responsibility:

- Collaborate with PSIRT and Brand team
- Validate vulnerability
- Multi-tiered review of Remediation and Communication Plan (approach and timeline to address issue)
- Adhere to plan
- Prevent disclosure of sensitive information

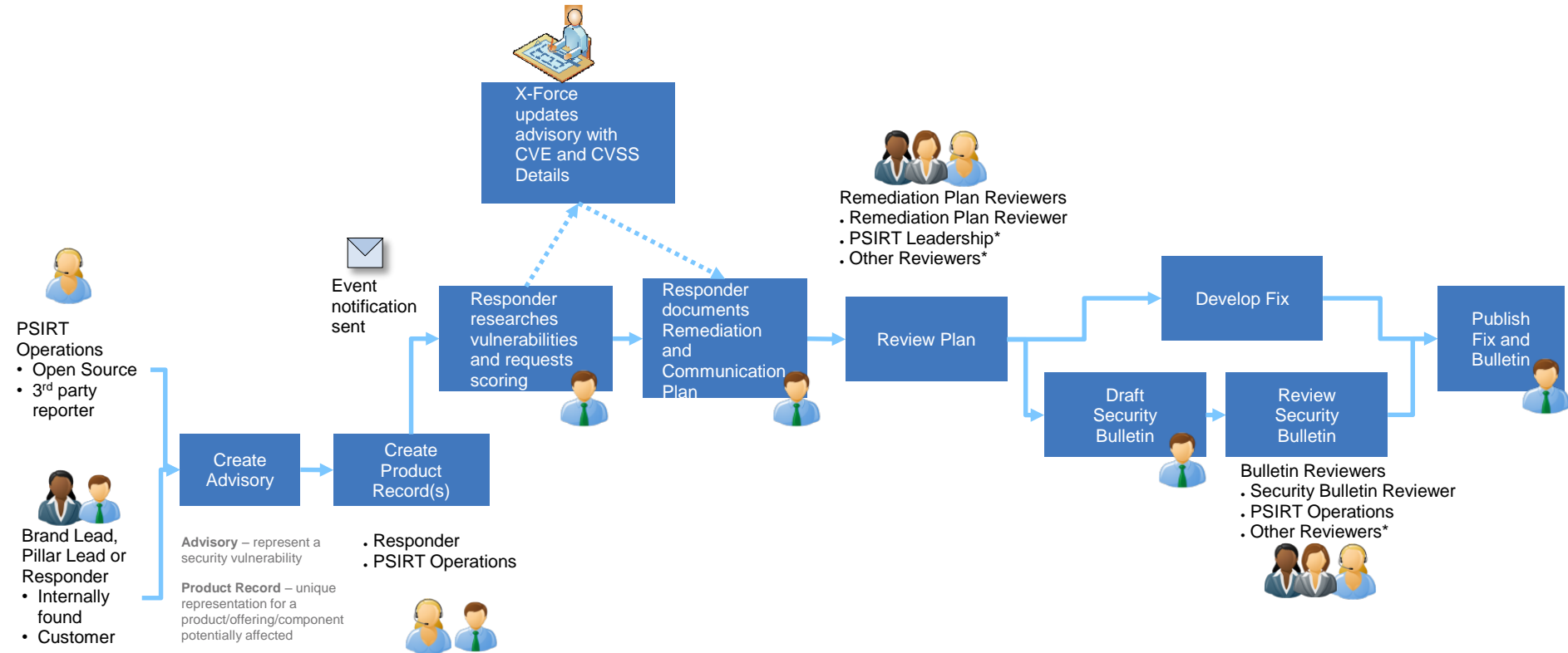
IBM PSIRT



Tooling Design Challenge

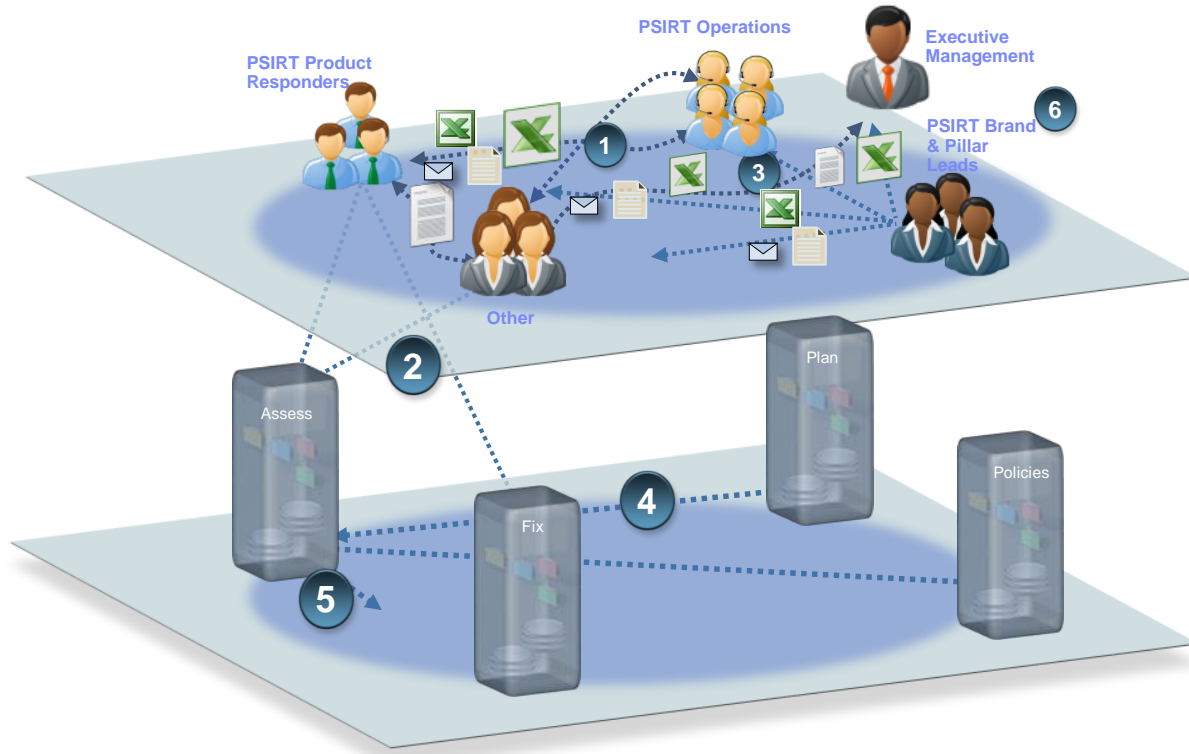


Simple scenario PSIRT process workflow



* Additional reviews may not be needed

PSIRT Process problems before workflow tool



- 1 Unstructured tasks and communication (paper or email)
- 2 Inefficient working environment spans systems
- 3 Inconsistent prioritization
- 4 Incomplete or inaccurate data flow between systems
- 5 Lack of control over system and business events (exceptions)
- 6 Poor visibility into process performance

Workflow-Based PSIRT Tool

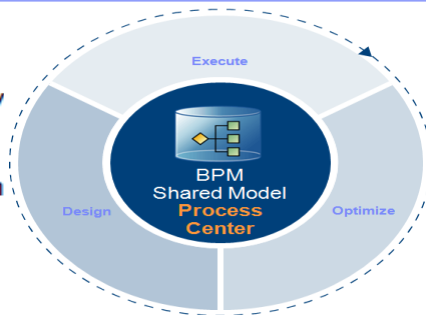


Workflow using Business Process Management (BPM)

BPM is an **integrated** approach to aligning the key activities of an organization into **processes** that you can consistently **measure** to **optimize** value to your organization and its end customers.

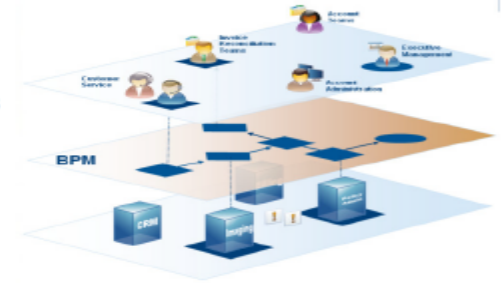
Integrated

- Technology + methodology
- Compresses cycle time for process lifecycle
- Enabled by BPMS platform



Processes

- Align people & tasks to valuable outcomes
- End-to-end vs. silo
- Cross-functional



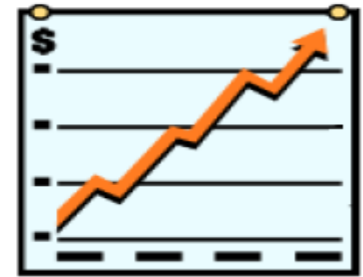
Measure

- High visibility into performance of process & people
- Metrics that are meaningful to the business
- Quantify impact of process improvements

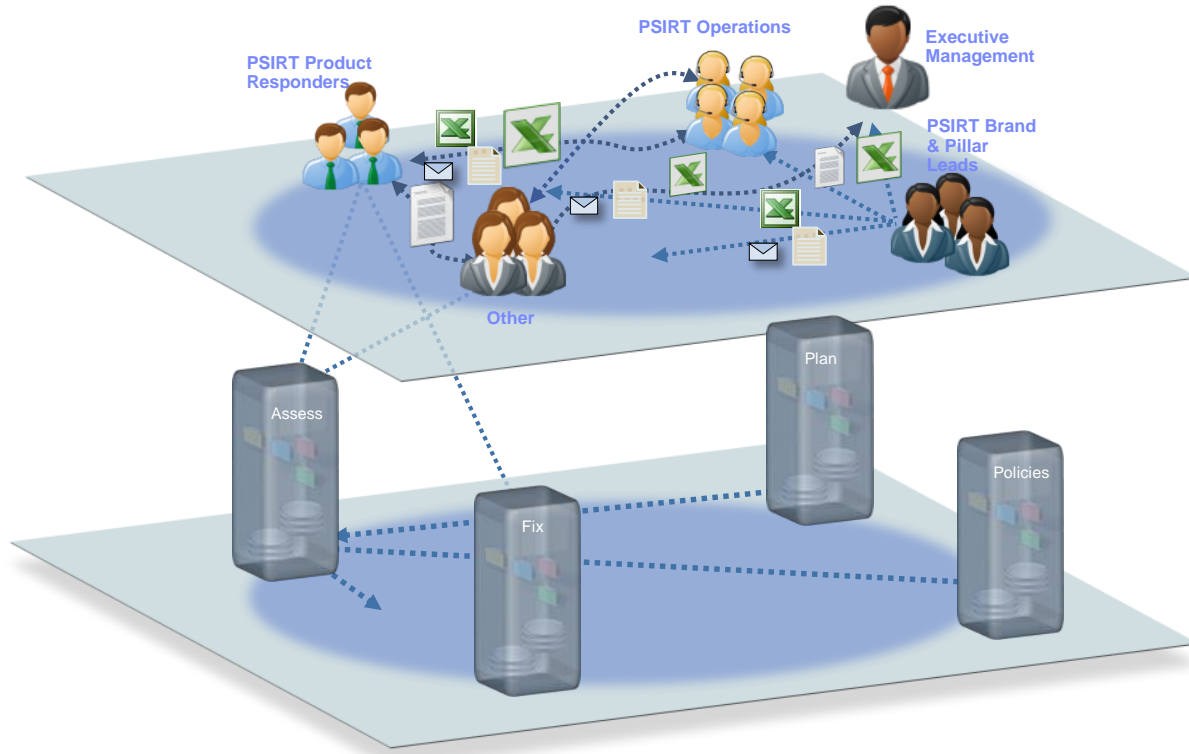


Optimize

- Enhance process to maximize business value
- Identify & remove bottlenecks
- Eliminate non-value-add activities

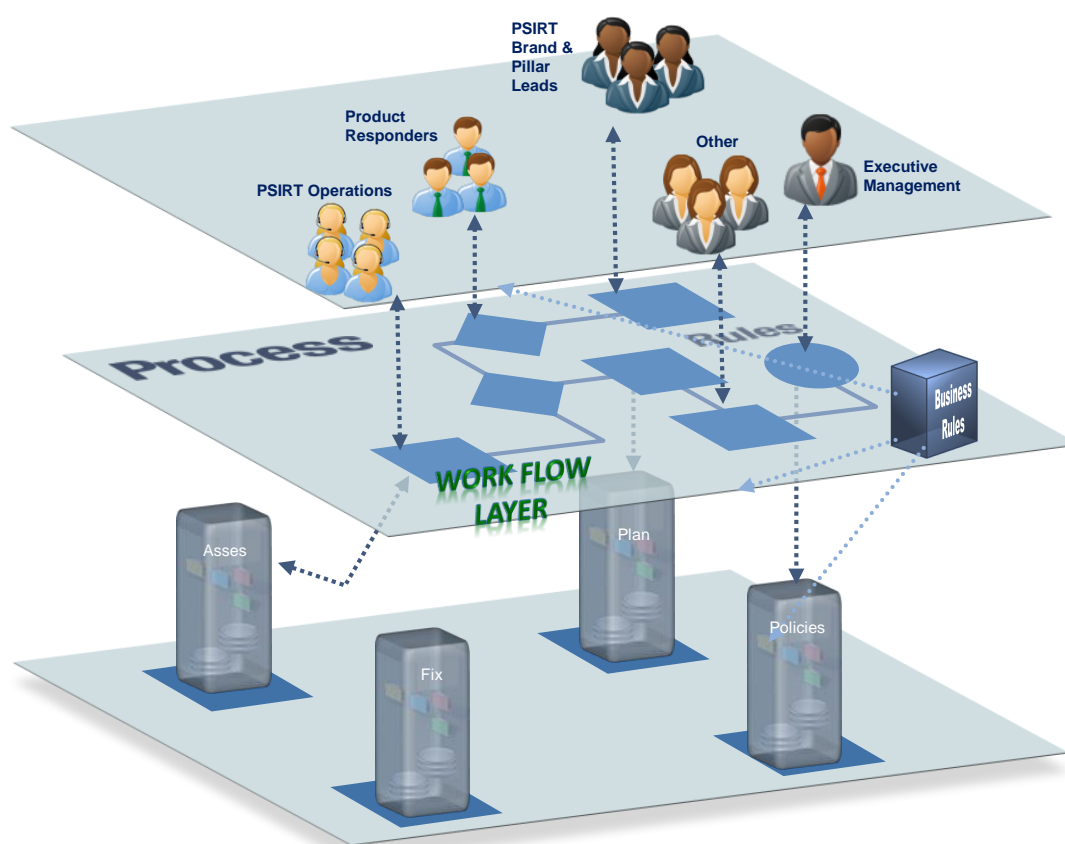


PSIRT Process problems before workflow tool



Inefficient
Ineffective
Inaccurate
Incomplete
Inconsistent
Inflexible
Invisible

PSIRT Process with workflow



- 1 Automate workflow & decision making
- 2 Helps reduce errors and improve consistency
- 3 Standardize resolution across geographies
- 4 Leverage existing systems and data
- 5 Monitor for business events and initiate actions
- 6 Real-time visibility and process control

Benefits:

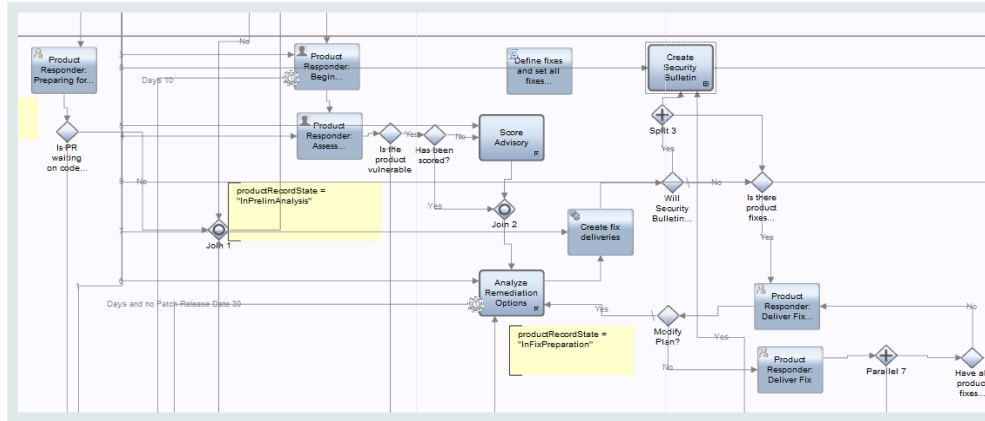
- Potential reduction in manual work and errors
- Faster, more consistent issue resolution
- Metrics, measurements, visibility and business-friendly reports
- Rapid, agile and iterative process improvements

Overview of PSIRT Tool with Workflow

- Workflow based tooling helps ensure timely identification, analysis, resolution and reporting of security vulnerabilities in IBM products
- PSIRT Process is integrated into the tool, where the steps within the process follow a managed workflow with tasks and notifications
- Tool supports Product Responders, Pillar Leads, Brand Leads, Reviewers, IBM X-Force and PSIRT Operations
- Each task has a task due date to ensure teams stay on track
- Tool features:
 - Workflow engine
 - Event notification
 - Task lists

Workflow engine

- Work flow engine guides the PSIRT users through the necessary steps in the PSIRT process



- The tool is like a big flow chart – where your next task depends on the answers you provide in your current task
- All PSIRT related transactions should occur inside the tool

Event notifications

- Event notifications are used to alert users when
 - Advisory created
 - Product Record created
 - Product Record closed
 - Product Record Remediation Plan created
 - Other reviews are required
 - Product Record Remediation Plan has completed reviews
 - New task assigned
 - Task almost due
 - Task overdue

Task based

- Task – an action a user needs to complete (to-do)
- Each user's to-do's are organized into a series of tasks
- The tool generates tasks for the appropriate person to complete for each PSIRT Process step
 - Workflow is role based - each task is designed to be completed by a particular role
 - Each users tasks are listed in their PSIRT Task list
 - Users must complete a task in order for the tool to progress to the next task
- All Brand and Pillar Leads are able to view all tasks for every role to track progression of a record
- Users need to claim a task to work on it; once claimed no one else can work the task


Workflow-Based PSIRT Tool benefits

- PSIRT Tool supports the PSIRT Process and guides users through a series of tasks
- PSIRT Policies and rules are incorporated into the PSIRT Tool
 - Plans are checked by a compliancy checker
 - Out of compliance records have different workflows with extra approvals
- Leads are able to easily pinpoint a Product Record's progression through the PSIRT Process
- PSIRT Operations and Leads can better monitor records that are non-complaint
- Reduction of rework due to exceptions and errors
- Significant reduction in emails

PSIRT Demo















All of a user's tasks are in one convenient location, clearly marked with due dates

My Tasks 

[Open Tasks](#) | [Completed Tasks](#)

▶ **Overdue**

▼ **Due Later (4)**

-  **Step: Product Responder: Provide vulnerability scoring information** 
Advisory ID 4434; Product Record ID 66938; Product PSIRT 4 Test; Product Record Owner -0562N897; Process ID 26124 Due: February 24, 2016 1:00 AM
 PSIRT_BRA-37_PIL-146_Team
-  **Step: Product Responder: Assess Product vulnerability** 
Advisory ID 4422; Product Record ID 66941; Product PSIRT 4 Test; Product Record Owner -0562N897; Process ID 26127 Due: February 24, 2016 1:00 AM
 PSIRT_BRA-37_PIL-146_Team
-  **Step: Security Bulletin Coordinator: Draft Security Bulletin** 
Advisory ID 4434; Product Record ID 66939; Product PSIRT 4 Test; Product Record Owner -0562N897; Process ID 26125 Due: March 2, 2016 1:00 AM
 PSIRT_BRA-37_PIL-146_Team
-  **Step: Product Responder: Create Remediation Plan** 
Advisory ID 4431; Product Record ID 66940; Product PSIRT 4 Test; Product Record Owner -0562N897; Process ID 26126 Due: March 5, 2016 1:00 AM
 PSIRT_BRA-37_PIL-146_Team

Tasks are automatically assigned to the correct people

Complete audit trail of every product record

Product Record History

Product Record History

Created by A BrandABrandLead (-0562N897@tst.ibm.com) at 19:25:06 EST on 02/14/2016.

PRID 66938: PSIRT Event Notification: New Product Record has been opened for PRID 66938, Product PSIRT 4 Test was sent to PSIRT Brand Lead, Brand Lead Backup, Pillar Lead, Pillar Lead Backup, for Brand PSIRT Test, Pillar PSIRT Test, Product PSIRT 4 Test by deadmin (deadmin) at 19:25:06 EST on 02/14/2016.

Product record clock started at 19:25:7 EST on 2/14/2016.

State set to New at 19:25:8 EST on 2/14/2016.

PRID 66938: New PSIRT Task Notification: Begin Product Vulnerability Analysis for PRID 66938, Product PSIRT 4 Test was sent to PSIRT Pillar Leads and Backup Pillar Leads for Brand PSIRT Test, Pillar PSIRT Test, Product PSIRT 4 Test by deadmin (deadmin) at 19:25:27 EST on 02/14/2016.

Vulnerability assessment begun by A BrandABrandLead (-0562N897@tst.ibm.com) at 19:32:53 EST on 02/14/2016.

PRID 66938: New PSIRT Task Notification: Provide Vulnerability Scoring Information for PRID 66938, Product PSIRT 4 Test was sent to PSIRT Pillar Leads and Backup Pillar Leads for Brand PSIRT Test, Pillar PSIRT Test, Product PSIRT 4 Test by deadmin (deadmin) at 19:33:12 EST on 02/14/2016.

CVSS scoring information provided by A BrandABrandLead (-0562N897@tst.ibm.com) at 19:37:32 EST on 02/14/2016.

State set to WaitingForScoring at 19:37:33 EST on 2/14/2016.

PRID 66938: New PSIRT Task Notification: Provide CVE Information for PRID 66938, Product PSIRT 4 Test was sent to X-Force Scoring team member by deadmin (deadmin) at 19:37:34 EST on 02/14/2016.

State set to WaitingForScoring at 19:38:56 EST on 2/14/2016.

Product Record is currently waiting for scoring of Advisory to complete by deadmin (deadmin) at 19:40:56 EST on 02/14/2016.

Scoring provided by DIANE MICKELSON (dmickel@us.ibm.com) at 19:47:02 EST on 02/14/2016.

State set to InRemediationPlanning at 19:48:57 EST on 2/14/2016.

State set to InRemediationPlanning at 19:49:0 EST on 2/14/2016.

Autofilled relevant CVEs by deadmin (deadmin) at 19:49:01 EST on 02/14/2016.

PRID 66938: New PSIRT Task Notification: Create Remediation Plan for PRID 66938, Product PSIRT 4 Test was sent to PSIRT Pillar Leads and Backup Pillar Leads for Brand PSIRT Test, Pillar PSIRT Test, Product PSIRT 4 Test by deadmin (deadmin) at 19:49:24 EST on 02/14/2016.

State set to InRemediationPlanning at 19:49:45 EST on 2/14/2016.

Remediation plan submitted for review by A BrandABrandLead (-0562N897@tst.ibm.com) at 19:55:54 EST on 02/14/2016.

PRID 66938: PSIRT Event Notification: Remediation Plan In Reviews for PRID 66938, Product PSIRT 4 Test was sent to PSIRT Brand Lead, Brand Lead Backup, Pillar Lead, Pillar Lead Backup, for Brand PSIRT Test, Pillar PSIRT Test, Product PSIRT 4 Test by deadmin (deadmin) at 19:55:55 EST on 02/14/2016.

PRID 66938: New PSIRT Task Notification: Review Remediation Plan By Plan Reviewer for PRID 66938, Product PSIRT 4 Test was sent to PSIRT Designated Product Remediation Plan Reviewer for Brand PSIRT Test, Pillar PSIRT Test, Product PSIRT 4 Test by deadmin (deadmin) at 19:56:08 EST on 02/14/2016.

PRID 66938: New PSIRT Task Notification: Draft Security Bulletin for PRID 66938, Product PSIRT 4 Test was sent to PSIRT Designated Product Security Bulletin Reviewer for Brand PSIRT Test, Pillar PSIRT Test, Product PSIRT 4 Test by deadmin (deadmin) at 19:56:34 EST on 02/14/2016.

Remediation plan Remediation Plan Reviewer review completed with comments "looks good" by A BrandABrandLead (-0562N897@tst.ibm.com) at 19:58:13 EST on 02/14/2016.

Remediation Plan Executive Approval(s) not needed due to plan compliance by deadmin (deadmin) at 19:58:14 EST on 02/14/2016.

Remediation Plan Reviews Complete by deadmin (deadmin) at 19:58:14 EST on 02/14/2016.

PRID 66938: PSIRT Event Notification: Remediation Plan has completed the Review cycle for PRID 66938, Product PSIRT 4 Test was sent to PSIRT Brand Lead, Brand Lead Backup, Pillar Lead, Pillar Lead Backup, for Brand PSIRT Test, Pillar PSIRT Test, Product PSIRT 4 Test by deadmin (deadmin) at 19:58:15 EST on 02/14/2016.

State set to FixInProgress (from Update EOL Items because allFixesPublished=false, allBulletinsUpdated=false, and customerCommunicationDone=true)

State set to InRemediationPreparation at 19:58:16 EST on 2/14/2016.

PRID 66938: New PSIRT Task Notification: Deliver Fix Or Modify Plan? for PRID 66938, Product PSIRT 4 Test was sent to PSIRT Pillar Leads and Backup Pillar Leads for Brand PSIRT Test, Pillar PSIRT Test, Product PSIRT 4 Test by deadmin (deadmin) at 19:58:33 EST on 02/14/2016.

Security bulletin created and submitted for review by A BrandABrandLead (-0562N897@tst.ibm.com) at 20:00:22 EST on 02/14/2016.

PRID 66938: New PSIRT Task Notification: Review Security Bulletin By Security Bulletin Reviewer for PRID 66938. Product PSIRT 4 Test was sent to PSIRT Designated Product Security Bulletin Reviewer for Brand PSIRT Test, Pillar PSIRT Test, Product PSIRT 4 Test

Email reminders to ensure tasks are handled on time

All relevant information is available for each step of the process



Advisory ID: 4434 Advisory Creation Date: 2/14/2016 Advisory Title: title Advisory CVEs:
Product Record ID: 66938 Product Record Start Clock Date: New Product Record State: New Effective CVSS: PSIRT 4 Test Product Name: PSIRT 4 Test Relevant CVEs:
Current Task: Assigned To: Assignee Role: On: Current Parallel Task: Assigned To: Assignee Role: On:

Direct links to the Knowledge Center

Advisory Information **Product Record Information**

Product Record Information

Help and full documentation [PSIRT Knowledge Center: Product Record Information](#)

General Product Record Information

Product Record ID: 66938 Product Record State: New Product Record Creation Date: 2/14/2016 Product Record Start Clock Date: Days Since PR Clock Start:
Product Record Creator: A BrandABrandLead Product Record Creator Intranet ID: -0562N897@tst.ibm.com Product Record Creator Role: Process Owner Is Product Record Migrated from PSIRT 1?
Product Record Owner: Product Record Owner Intranet ID:

Product Record Process ID: 26124

General Product Record Information

Product Record ID: 66938 Product Record State: New Product Record Creation Date: 2/14/2016 Product Record Start Clock Date:

Product Record Creator: A BrandABrandLead Product Record Creator Intranet ID: -0562N897@tst.ibm.com Product Record Creator Role: Process Owner Is Product Record Archived:

Product Record Owner: Product Record Owner Intranet ID:

Product Record Process ID:
26124

Product Record Task Info

Last Completed Task: Current Task: Last Completed Parallel Task: Current Parallel Task:

Completed By: Assigned To: Completed By: Assigned To:

On: Assignee Role: On: Assignee Role:

Reinit point: On: Reinit point: On:

Reinit point:
0 Reinit point:

Built in checks for duplicate records

Product

* Brand:	Product ID:	PSIRT Blog Tag:
PSIRT Test	Product short name:	
* Pillar Name:	Is Product archived?	
PSIRT Test		
* Product Name:	Product Type:	
PSIRT 4 Test	<no selection>	

Product

Brand: PSIRT Test Product ID: 3169 PSIRT Blog Tag:
Pillar Name: PSIRT Test Product short name:
Product Name: PSIRT 4 Test Is Product archived? No
Product Type: On-Premises

Product Analysis Has Begun

Analysis of this Product's potential vulnerability to the issue outlined in this Advisory has been started. *
* Are you ready to report right now on whether the Product is vulnerable to issue described in Advisory?
 Yes No

Product Analysis

Is Product vulnerable to issue described in Advisory? If no, must provide reason:
 Yes, this product is vulnerable to this issue; No, this product is not vulnerable to this issue
 I am only affected due to a product that I bundle and will ONLY be publishing a Bundling Bulletin and do not need to provide a fix.

Planned Publish Date for the Bundling Bulletin:

19

Expedited Status

Is this Product Record an Expedited Product Record? Only change this to OVERRIDE the Expedited status of the related Advisory.
 Yes No

Product Record Expedited Comments: (For each edit, add a new line at the top with a description of the edit. Don't overwrite previous entries, just add a new top line.)

If you are requesting a DIFFERENT Expedited Status for this Product Record than the Expedited Status for the related Advisory, PSIRT Operations must approve this request before the Product Record can proceed.

Similarly, if you are requesting a DIFFERENT Not-to-exceed Date for this Product Record than the Expedited Not-to-exceed Date for the related Advisory, PSIRT Operations must approve this request before the Product Record can proceed.

Alternate process paths triggered automatically when required

Expedited process paths triggered automatically when required

Prior Scoring

Were reported CVEs available for this issue?

Yes No

Scoring Possible?

* Can scoring be performed?

Yes, scoring can be done with the information available No, additional information is needed before scoring can be completed

CVE Assignment and CVSS Scoring

CVE:	CVSS Score:	CVSS Vector:	Vulnerability Type:	X-Force URL:	Score Comments:	CVE Description:
<input type="text" value="CVE-2016-0001"/>	<input type="text" value="5.70"/>	<input type="text" value="AV:L/AC:L/Au:S/C:P/I:C/A:P"/>	<input type="text" value="Other"/>	<input type="text" value="url"/>	<input type="text"/>	<input type="text" value="description"/>



Check Scoring for Self-Consistency and Formatting

Get CVE Details from XForce for CVE(s) above

CVE Edits

Advisory Scoring Status:

Built in compliance checking

Pull Scoring information directly from X-Force database

Appropriate Reviews are determined and requested by the tool

Remediation Plan Edit History: (For each edit, add a new line at the top with a description of the edit. Don't overwrite previous entries, just add a new top line)

Comments by A BrandABrandLead on Sun Feb 14 2016 20:04:17 GMT-0500 (EST): moved fix dates out a week

Plan Reviews

Plan Review by Designated Product Remediation Plan Reviewer

* Please select your response to this review. (Make your selection first here, then provide comments, below.)

Review Completed

* Plan "Review Completed" comments: (Note: please don't overwrite previous comments, simply add them below on the top line)

new dates are still compliant

Comments by A BrandABrandLead (-0562N897@tst.ibm.com) on Sun Feb 14 2016 19:58:13 GMT-0500 (EST): Approved

Captures review history and plan modifications
Reviewers can see comments left by previous reviewers

Security Bulletin

Help and full documentation: [PSIRT Knowledge Center: Security Bulletin](#)

Security Bulletin Plan

Will security bulletin be issued? Yes, a security bulletin will be issued No, a security bulletin will not be issued **Planned Security Bulletin Publish Date** 3/12/2016

Will a vulnerability-specific Advisory Security Bulletin template be provided by PSIRT Ops?

Yes No

Security Bulletin Content

Important! When you are ready to publish the Security Bulletin, BEFORE you do so, read all reviewer's comments to check for necessary typo fix or other important information. Reviewers may select "Review Completed" for the Security Bulletin even though typo fixes are needed before publication.

Relevant CVE Information:

CVEID: CVE-2016-0001

DESCRIPTION: description

CVSS Base Score: 5.7

CVSS Temporal Score: See url for the current score

CVSS Environmental Score*: Undefined

CVSS Vector: (AV:L/AC:L/Au:S/C:P/I:C/A:P)

This is a Bundling Bulletin.

* If you use DCF, draft your bulletin in DCF and put the DCF preview link here. You should ONLY use the editor below if you are NOT using DCF:

DCF preview link:

If you are NOT using DCF, then use the editor below to draft your Security Bulletin:



*Things marked in red are DCF fields where you would enter data.

*Things marked in GREEN are where you would put your product unique data

External Publishing

Help and full documentation: [PSIRT Knowledge Center: External Publishing](#)

Fix Delivery Status

Product Name:	VRM: (Version, Release, Modification, ie: 1.2.3)	Actions to address release:	Planned Code Fix Release Date:	Code Fix Is Delivered:	Actual Code Fix Release Date:
Product 1	1	Code fix	3/12/2016	<input checked="" type="checkbox"/>	3/12/2016
Product 2	2	Code fix, Mitigation	3/26/2016	<input type="checkbox"/>	

* Fix Delivery Comments:

Security Bulletin Publication Status

Has security bulletin been published? *

* Date Security Bulletin published:

3/12/2016

* Published Security Bulletin URL (verify external link is active first):

url.ibm.com

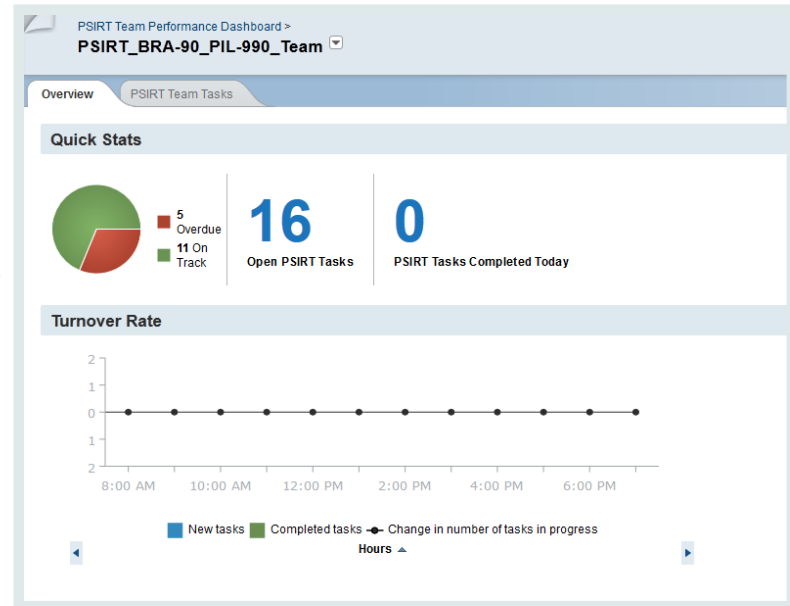
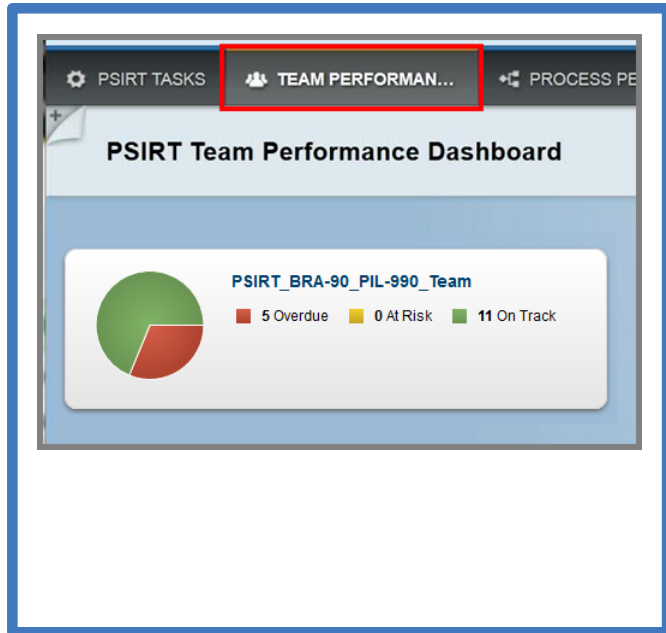
Product Name:	VRM: (Version, Release, Modification, ie: 1.2.3)	Actions to address release:	Code Fix Is Delivered:	Actual Code Fix Release Date:	Communication Plan for supported release:	Planned Security Bulletin Date:	Is version included in Bulletin?	Date version included in Bulletin:
1	1	Code fix	<input checked="" type="checkbox"/>	3/12/2016	Included in initial Security Bulletin	3/12/2016	<input checked="" type="checkbox"/>	3/12/2016
2	2	Code fix, Mitigation	<input checked="" type="checkbox"/>	3/12/2016	Will update Security Bulletin	3/26/2016	<input type="checkbox"/>	

* Security Bulletin publish comments:

Remains open until every task is complete

Team Performance – Overview of task status

- Brand Lead can see overall Brand performance
- Pillar Lead can see overall Pillar performance



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