



Global IT - Department of Defense Product

Web VAPT Report

July 2019

*A comprehensive VAPT report
of web application by using an
Attacker oriented approach,
to uncover potential
Security threats*



Audit Conducted for: Department of Defense Product

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Location of Audit: 023, 5th Floor, Tower A, Emaar Digital Greens, Sector 61, Gurugram - 122102, Haryana

Report Submitted On: 29th July 2019

Test Duration: 08th July 2019 to 29th July 2019

URL of the Web-Application: <http://103.73.189.114:803/>

Report Reviewed by: Mr. Vibhor Sharma
(s.vib@crriskadvisory.com)

Report Handed over to: Mr. Uttam (uttam@globalitpoint.com)

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Part 1: Executive Summary

We thank you for choosing CyberRoot Risk Advisory Pvt. Ltd. as your Information Security partner. We appreciate your business and look forward to provide you services in the near future as well. The following report presents the results of the audit of web application as per your request. In case you have any questions, please contact your CR Risk Advisory representative or email cert@crriskadvisory.com

Section 1. Overview

SCOPE

In depth Security Assessment of the following Web Application:

Web Application	http://103.73.189.114:803/	
Audit Dates	08 th July 2019 to 29 th July 2019	
Nature Of Site	Dynamic	
Server	Staging	
User Group	Open Group	
User Roles	User Type	Username
	Admin	rgera@nic.in

EXCLUSIONS

- ☐ No Exclusions

TOOLS USED

- ☐ Burp Suite
- ☐ Advance cookie manager
- ☐ Netsparker
- ☐ Sqlmap
- ☐ Nmap

STANDARDS FOLLOWED

Comprehensive vulnerability assessment has been carried out as per recommendations by CERT-In and not limited to OWASP Top 10 only.

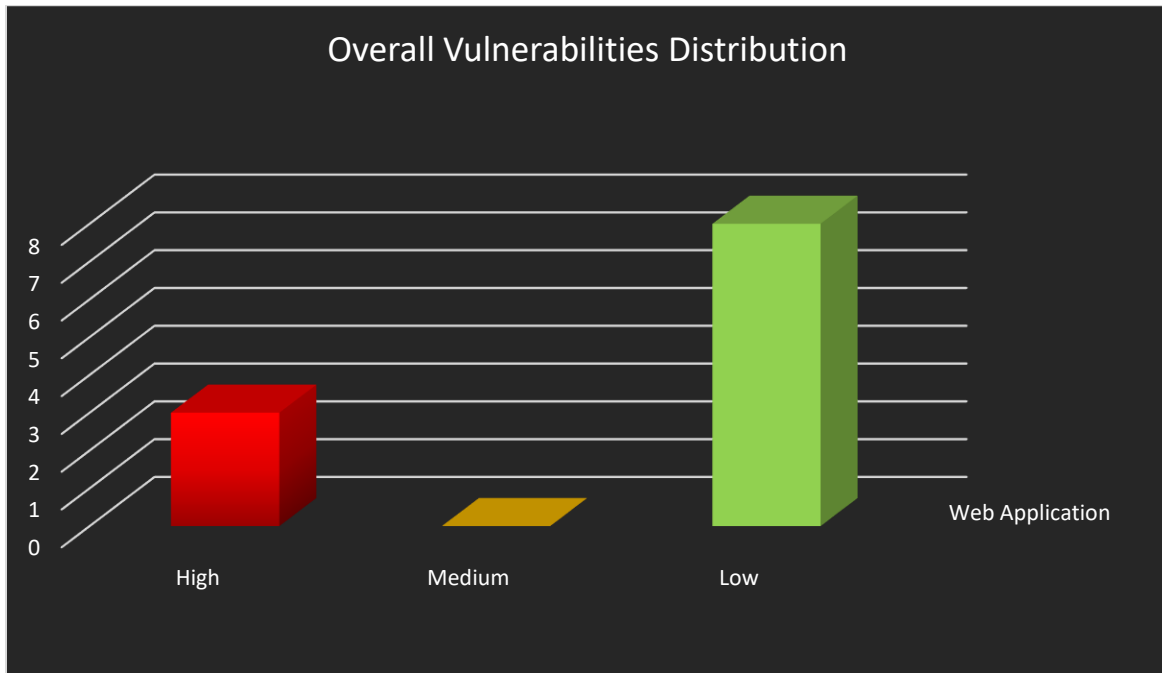
http://103.73.189.114:803/	
Based on OWASP Top 10 - 2017	Based on OWASP Top 10 - 2013
Injection	Injection
Broken Authentication & Session Management	Broken Authentication & Session Management
Sensitive Data Exposure	Cross-Site Scripting
XML External Entities	Insecure Direct Object References
Broken Access Control	Security Misconfiguration
Security Misconfiguration	Sensitive Data Exposure
Cross Site Scripting	Missing Function Level Access Control
Insecure Deserialization	Cross-Site Request Forgery
Using Components with Known Vulnerabilities	Using Components with Known Vulnerabilities
Insufficient Logging & Monitoring	Unvalidated Redirects and forwards

OBSERVATIONS SUMMARY

Based on tests carried out on the Web Application it was found that Web Application did contain Vulnerabilities as per OWASP Top 10 standards.

The total vulnerabilities found were:

Web Application Vulnerabilities: High=3, Medium=0, Low=8 (Total 11 Vulnerabilities)



LIST OF WEB APPLICATION VULNERABLE POINTS

■ High | ■ Medium | ■ Low

S.No.	Vulnerable Point/Location	Vulnerability	Means of Identification Manually/Tool	Comments
1.	On: http://103.73.189.114:803/Detail-Company?mu=KQ5FIC8PdXE=&id=la73X4UPRzXeBrH8npZMHJBsmrN4UkA+MWweqxJLGNe8FCsDg+c2LQ==	Cross-Site Request Forgery	Burp Suite	An attacker may force the users to execute actions of the attacker's choosing. A CSRF exploit can compromise end user's data.
2.	On: http://103.73.189.114:803/AddMasterCompany?mu=OIVxjUlnTVc=&id=la73X4UPRzXeBrH8npZMHBk37Jve+h/bX8ysNUOjiDQ=	Broken Authentication	Burp Suite	A remote attacker could send a malicious request with a specially-crafted file, filename or mime type and execute arbitrary code.
3.	On: http://103.73.189.114:803/AddProduct?mu=MRtCwN+7N6dMmohOhVozbQ==&id=q8jUjAMoUEw6vX6gOSC5cG3EqgKJ5YFXsGD4vq6Y3SxtkV OGn2vF5w==	Arbitrary File Upload / Remote Code Execution	Burp Suite	An attacker can simply access the object he/she isn't authorized for.

4.	On: http://103.73.189.114:803/Login	Clear Text Password Submission	Burp Suite	An Attacker can intercept the data in transit and can use it for the malicious purpose.
5.	On: http://103.73.189.114:803/Dashboard	Missing Security Headers	Manual	An attacker can perform wide variety of attacks if security headers are not set properly.
6.	On: http://103.73.189.114:803/ChangePassword	Weak Password Policy	Manual	It is observed that the application is using weak password policy. Which can be easily guessed and brute forced and accounts can get compromised.
7.	On: http://103.73.189.114:803/Dashboard	TRACE Method	Burp Suite	An attacker can bypass HttpOnly flag and gain session cookies when combined with other attacks.
8.	On: http://103.73.189.114:803/Dashboard	Version Disclosure	Manual	Attacker can gain an understanding of the application and potentially develop attacks targeted at the specific version.

9.	On: http://103.73.189.114:803/Dashboard	Outdated JQuery library	Manual	The version of the JQuery is vulnerable to cross site scripting attacks and Prototype Pollution.
10.	On: http://103.73.189.114:803/Dashboard	Outdated JQuery UI library	Manual	The version of JQuery UI is vulnerable to cross site scripting attacks via Tooltip
11.	On: http://103.73.189.114:803	Error Handling	Manual	Page contains an error/warning message that disclose sensitive information.

Part 2: Details of Penetration Testing

<http://103.73.189.114:803/>

Vulnerable Point – 1

Cross-Site Request Forgery		
Vulnerability Classification:	CVSS	7.1
	Impact	High
	Exploitability	Easy
	OWASP	A8
	Fix	Quick
Description:	Cross-site request forgery (CSRF) vulnerability allows attackers to make requests on behalf on the user and can be used to trick a user’s browser into performing an unwanted action on your site	
Impact:	An attacker can force an end user to execute unwanted actions on a web application in which they're currently authenticated.	
Fix Recommendations:	Following are the fix recommendations: <ul style="list-style-type: none">• Check standard headers to verify the request is same origin.• Implement CSRF tokens to each request and associate them with the user’s session.	
Location of Vulnerability are as Follows :		

Request to: http://103.73.189.114:803 (?) Option

Raw Params Headers Hex ViewState

POST
 /AddMasterCompany?mu=KQ5FIC8PdXE%3d&id=1a73X4UPRzXeBrH8npZMHBk37Jve+h%2fbfo2xdeDCpskRElM6pz
 lsfw%3d%3d HTTP/1.1
 Host: 103.73.189.114:803
 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:67.0) Gecko/20100101 Firefox/67.0
 Accept: */*
 Accept-Language: en-US,en;q=0.5

(?) < + > 0 ma

CSRF HTML:

```

jlecEbZ0aHWM&#43;74A3bGbY6tX0PlVmsUInmDdFID047KEP2p4eBDQHC8hngb39pMs6jbc3FL&#43;YXshYvMOD
xg&#43;&#47;oVr fw&#43;Zd3medAzynNXr72yXcwSwnEhoh9Rn8cD3BjeupEsZf3QsM49ZlEgeK&#43;ym6aUkrl
bk2MdRleVrddQKWgZoHxLgSttjFiA2onbRcHcX40cyQ5qGKmgPU2hm1C2sSTpSWCgheQwilQxaIoJuVoBLHK9NqY8
rujCbt dxz&#47;IAWGOFBCsch685enxgqiqlh&#47;7wj46fi5ZsMWYsMQ3S98jlFtj40KQWtn8nR0dn6fileUSQb
bPstyoIK&#43;IevYiTmK&#47;nE&#43;0Lzu8LnX3aqqS76YPPo&#43;56HcEjPuQnX6d9QiVxwuIKxXSJXFA8bG
wEa&#43;Hrldz3exEVZ95Dt7EU5jhlr4upSqmf0N8HY480uRopa4BqQf7a7c2Bd77LldwxHpjMR&#43;Q&#61;&#6
1;" />
    <input type="hidden" name="ctl00&#36;ContentPlaceHolder1&#36;txtcomp" value="CSRF"
  />
    <input type="hidden"
name="ctl00&#36;ContentPlaceHolder1&#36;chkintrestedarea&#36;0" value="2" />
    <input type="hidden"
name="ctl00&#36;ContentPlaceHolder1&#36;chkmastermenuallot&#36;2" value="17" />
    <input type="hidden" name="ctl00&#36;ContentPlaceHolder1&#36;chlrrole&#36;0"
value="Admin" />
    <input type="hidden" name="&#95;&#95;ASYNCPPOST" value="true" />
    <input type="hidden" name="ctl00&#36;ContentPlaceHolder1&#36;btnsubmit"
value="Save" />
    <input type="submit" value="Submit request" />
  </form>
</body>
</html>

```

103.73.189.114:803/Dashboard-View?id=ZxL3p%2fb%2bRnc%3d

DDP

rgera@nic.in

SuperAdmin

Search (Name,emailcompany/division/unit name)

Back

Total Records:- 20

S.No.	Company	Role	Nodal Officer Name	Nodal Officer Email	Action
1	BDL	Company	Ch. Ramesh Babu	bdlmnr@bdl-india.in	
2	BEL	Company	Bhanu Prakash	srivastavabp@bel.co.in	
3	BEML	Company	K R Radha Krishna	cgmq@beml.co.in	
4	CSRF	Admin			
5	DDP	SuperAdmin	Rajesh Gera	rgera@nic.in	
6	DDP-INDIGENISATION	Admin	Shrish Kumar	shrishkumar.ofb@ofb.gov.in	
7	GRSE	Company	Cdr Bhaskar Sengupta in (Retd)	sengupta.Bhaskar@grse.co.in	
8	GSL	Company	Shri D S Patekar	devanandspatekar@goashipyard.com	
9	HAL	Company	Ramakrishna K	gm.indg@hal-india.com	
10	HSL	Company	Rajesh Panday	dgmmdo@hslvizag.in	
11	MDL	Company	Cmdr(Dr) Jawahar M Jangir	jmjangir@mazdock.com	

103.73.189.114:803

Request to: http://103.73.189.114:803

Raw Params Headers Hex ViewState

0 matches

CSRF HTML:

```

s6fpheV0n6j;R0Q3;Uftr0BfPwby7FICABs0oZx8kZBTR1SBHc#47;ThGRf4dWQ1J133S6CR7LGXlk8C16HQ0c#43;VV6#
47;hpbERmdmD90H0H6FDHcAYfZaq6qTj08TQD6c#47;UFWHqPcshy32yXOU4vTQh9v0Rtc2c#43;vyrc7jIyT2SufmouR
9a82Sud0G0EcXGN8k3w0CtYRaxgdAP9SRODf0fscchFLj2BpE93cP127fXsPcnnSh1FT00cyKSNP10cYg1Th8DAgpl0Rv
81fFyhmG4c#47;1Da5mk0e41M2K0j5ytk88rh7kTlwc53Vsq8qge3GkLWtSh4c#43;opoc1lUd31JJQHgG6c#43;1kG
5e8T0Cp7c2AymeWtp5000JH0uLHv9c#47;ZihydaMafmB8rvbbhtAa#47;GBc#43;1D4Xov704c#47;7Gf00je3Uls
Fgld0ChcyY7s#47;0j49483vcaC8pRv89prsd0f4fspan5180qA3S1ChfBcRq#43;HvJWskC1Qc#43;f0Hj1UM0a
hmkC5v7W0YUW8BqMDP;R8BchzskHY6fi;980oLThBcc4c#61;"/>
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;hfId" value="3" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;companyengaged" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;companyname" value="BEML" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;taddress" value="Hello" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;selstate" value="Select#32;State" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;tpincode" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;tgstno" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;tpanno" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;txtceoname" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;txtCEOEmailId" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;txtTelephone" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;txtFaxNo" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;txtWebsite" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;txtcimo" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;txtIRCode" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;rdNo" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;txtFacebook" value="" />
<input type="hidden" name="ct100#36;ContentPlaceHolder1#36;txtTwitter" value="" />

```

Request to: http://103.73.189.114:803



Options

Raw

Params

Headers

Hex

ViewState

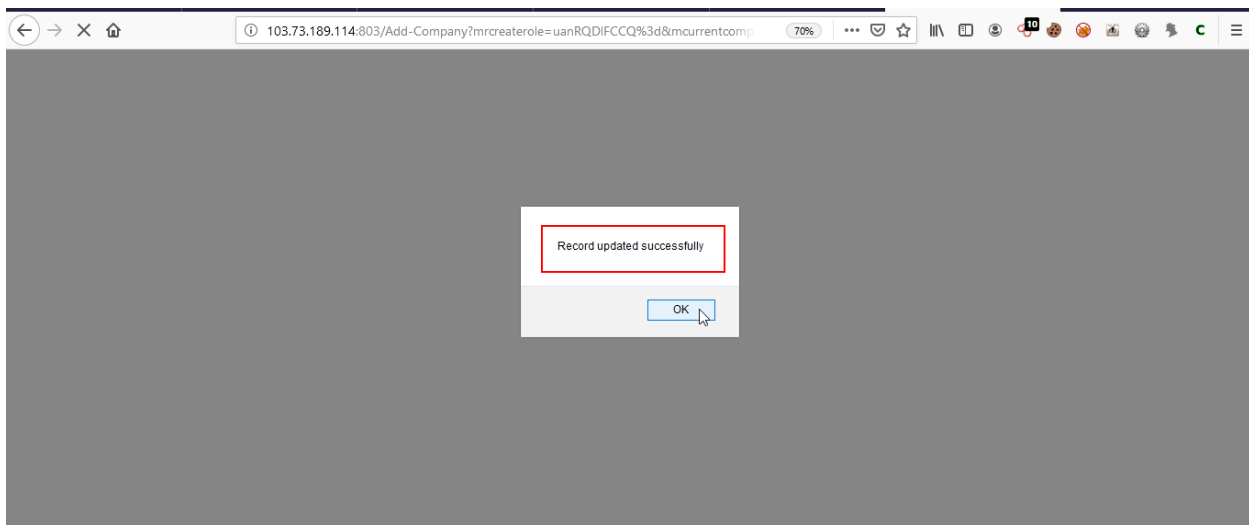


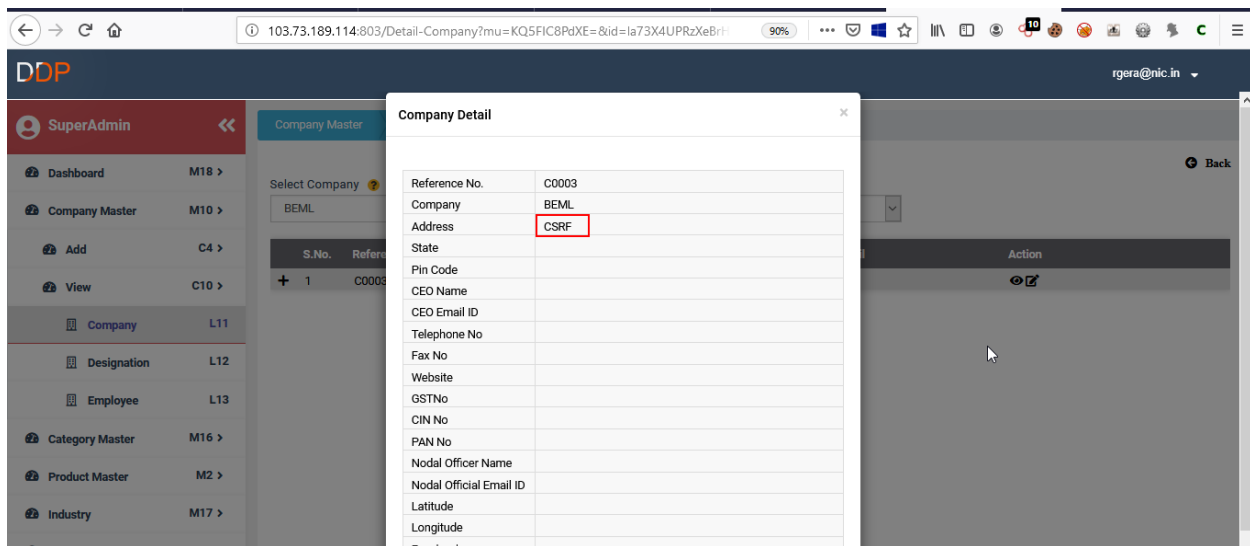
Type a search term

0 matches

CSRF HTML:

```
s6fpbeV8n6jRQrjUfvroBfPuwby7FKABr0oZxBkZBTRiSBH&#47;TkGZRfdMQiJl33SsCR7LGXLk82i6HQ0&#43;VV&#47;hpERMdzmD90HH05FDHtaYfZaq5qTjo8TQDS&#47;UPWMqFtsbyRJyXOU4wTXb9v8Et2&#43;vyrsYjIyT29uKmoUR9a9ZSudG0EcXGN8k3w0CtYRsxgdAPX9RODf0fschF2LjZBpE9JtP127fXsPttnnSbIFT00CyK9MPIUtYglTh8DAgp10Rv8IFfyhmGJ&#47;IDa9nkXw4IMQK0j9ytk8Erh7kTIwgc53Vsq8gk3GkLWemSh&#43;opocILuH3IJJQHgG5&#43;IkGss8T0Cp7tZAyn6WYp5Q00JMSuRINvs&#47;ZihydaMaHmBRvwbkktA&#47;GB&#43;IiD4XovY0&#47;7GF0Qje3UlsKgLbQCHzyE7s&#47;8j4V4KKvaC6EpEzyE8prsd0fXf5pmm51S0qAJSl0hfRcRq&#43;MvJWskClQ&#43;fONjlUMUaRnrCsMvFW0YUWBEgMDPrR8BhczkzakrHY8fLj88oLYbBcc4&#61;"; />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;hfid" value="3" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;companyengaged" value="" />
/>
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;tcompanyname" value="BEML" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;taddress" value="CSRF" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;selstate" value="Select&#32;State" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;tpincode" value="" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;tgstno" value="" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;tpanno" value="" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;txtceoname" value="" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;txtCEOEmailId" value="" />
/>
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;txtTelephone" value="" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;txtFaxNo" value="" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;txtWebsite" value="" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;tcinno" value="" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;txtIECode" value="" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;S" value="rdoNo" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;txtFacebook" value="" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;txtTwitter" value="" />
<input type="hidden" name="ct100&#36;ContentPlaceholder1&#36;txtLinkedin" value="" />
```





Please apply the Patch in all the parameters throughout the application

Vulnerable Point – 2

Broken Authentication		
Cross-Site Request Forgery Session Management	CVSS	8
	Impact	High
	Exploitability	Easy
	OWASP	A2
	Fix	Quick
Description:	Access control enforces policy such that users cannot act outside of their intended permissions.	
Impact:	It leads to unauthorized information disclosure, modification or destruction of all data, or performing a business function outside of the limits of the user.	
Fix Recommendations:	Following are the fix recommendations: <ul style="list-style-type: none">• Develop a strong authentication and session management controls such that it meets all the authentication and session management.• Use centralized access controller and data contextual access control.	
Proof of Concept and steps of verification of vulnerability with screenshots:		

S.No.	Affected Nodes	
2.	Affected URL	http://103.73.189.114:803/Detail-Company?mu=KQ5FIC8PdXE=&id=la73X4UPRzXeBrH8npZMHJBsmrN4UkA+MWweqxJLGNe8FCsDg+c2LQ==

Proof of Concept and steps of verification of vulnerability with screenshots:

Request to: <http://103.73.189.114:803> ? Options

Raw Params Headers Hex ViewState

POST

[/AddMasterCompany?mu=0IVxjUlnTVc%3d&id=1a73X4UPRzXeBrH8npZMHBk37Jve+h%2fbX8ysNU0jiDQ%3d](http://103.73.189.114:803/AddMasterCompany?mu=0IVxjUlnTVc%3d&id=1a73X4UPRzXeBrH8npZMHBk37Jve+h%2fbX8ysNU0jiDQ%3d)

HTTP/1.1

Host: 103.73.189.114:803

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:67.0) Gecko/20100101 Firefox/67.0

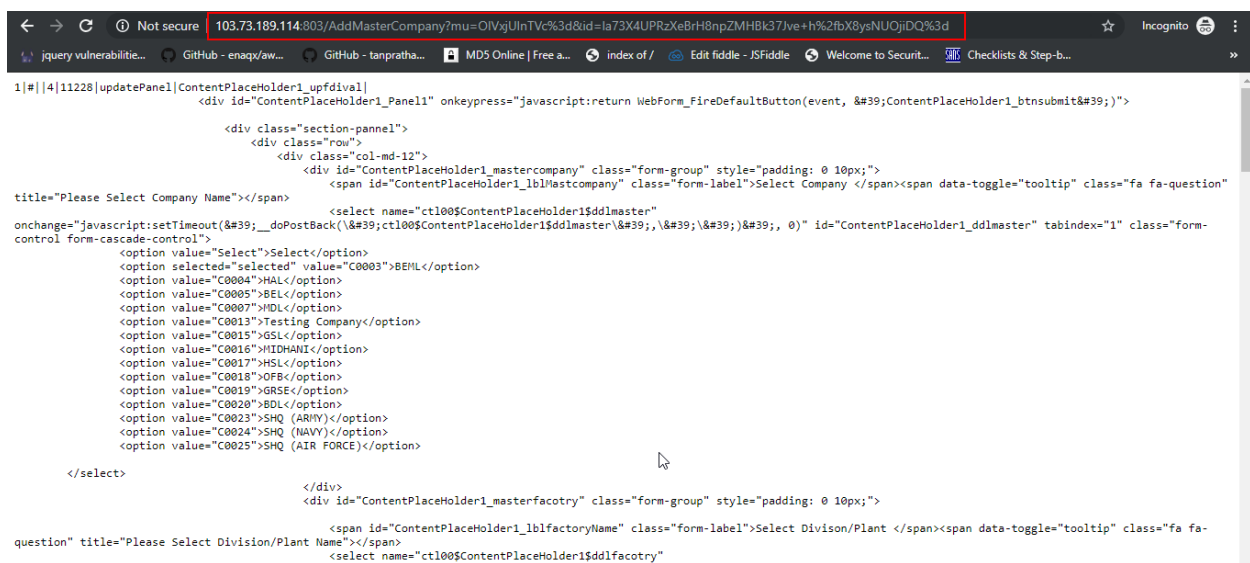
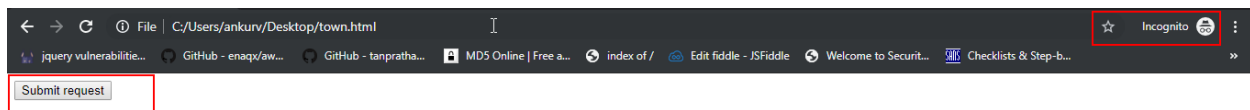
Accept: */*

Accept-Language: en-US,en;q=0.5

? < + > Type a search term 0 matches

CSRF HTML:

```
<html>
  <body>
    <script>history.pushState('', '', '/')</script>
    <form
      action="http://103.73.189.114:803/AddMasterCompany?mu=0IVxjUlnTVc%3d&id=1a73X4UPRzXeBrH8npZMHBk37Jve+h%2fbX8ysNU0jiDQ%3d" method="POST">
      <input type="hidden" name="ct100%36;ContentPlaceholder1%36;sn"
        value="ct100%36;ContentPlaceholder1%36;upfdival%36;ct100%36;ContentPlaceholder1%36;
        btnsubmit" />
      <input type="hidden" name="ct100%36;ContentPlaceholder1%36;ddlmaster"
        value="C0003" />
      <input type="hidden" name="ct100%36;ContentPlaceholder1%36;ddlfacotry"
        value="D0038" />
      <input type="hidden" name="ct100%36;ContentPlaceholder1%36;txtcomp" value="50" />
      <input type="hidden" name="%36;%36;EVENTTARGET" value="" />
      <input type="hidden" name="%36;%36;EVENTARGUMENT" value="" />
      <input type="hidden" name="%36;%36;LASTFOCUS" value="" />
      <input type="hidden" name="%36;%36;VIEWSTATE"
        value="%36;wEPDwUJNTAxOTAyNzczDxYCHg5Vc2VyTG9naW5FbWpAUyK0trWjdrM2RwUHM5dzUwZ05CamF6dz
        09FgJmD2QWAgIBD2QWcmYPFgIeB1Zpc2liGV0ZAIBDw8WAh4EUGV4dAUMcmDlcmFABmljLmluZGQCAw8PFgI
        fAgU
        KU3VwZXJBZGlpbmRkAgQPFgIeCwluYmVyaHRtbAWTSDx1bCBjbGFzc29nbmF2ICBuYXkybG1zdCc%36;PGxpIGNs
        YXNzPSdwYXJlbmQtbmF2Jz48YSBocmVmpScjJyAgdG10bGU9Jyc%36;PGkrgY2xhc3M9J2ZheyBmYS10YWNob21ld
```



Dashboard

M18 >

Company Master

M10 >

Add

C4 >

Company

L5

Division/Plant

L6

Unit

L7

Designation

L8

Employee

L9

View

C10 >

Category Master

M16 >

Product Master

M2 >

Industry

M17 >

Manual

M19 >

Select Company

BEML

Select Division/Plant

Truck Division

Unit

Save Unit

S.No.	Company	Division	Unit	Nodal Officer Name	Nodal Officer Email	Role	Created By
1	BEML	Truck Division	Truck Division Mysuru			Unit	rgera@nic.in
2	BEML	Truck Division	Truck division planning	Gopinath B.R	yp@beml.co.in	Unit	cgmq@beml.co.in
3	BEML	Truck Division	23			Unit	rgera@nic.in
4	BEML	Truck Division	25			Unit	rgera@nic.in
5	BEML	Truck Division	30			Unit	rgera@nic.in
6	BEML	Truck Division	35			Unit	rgera@nic.in
7	BEML	Truck Division	50			Unit	rgera@nic.in

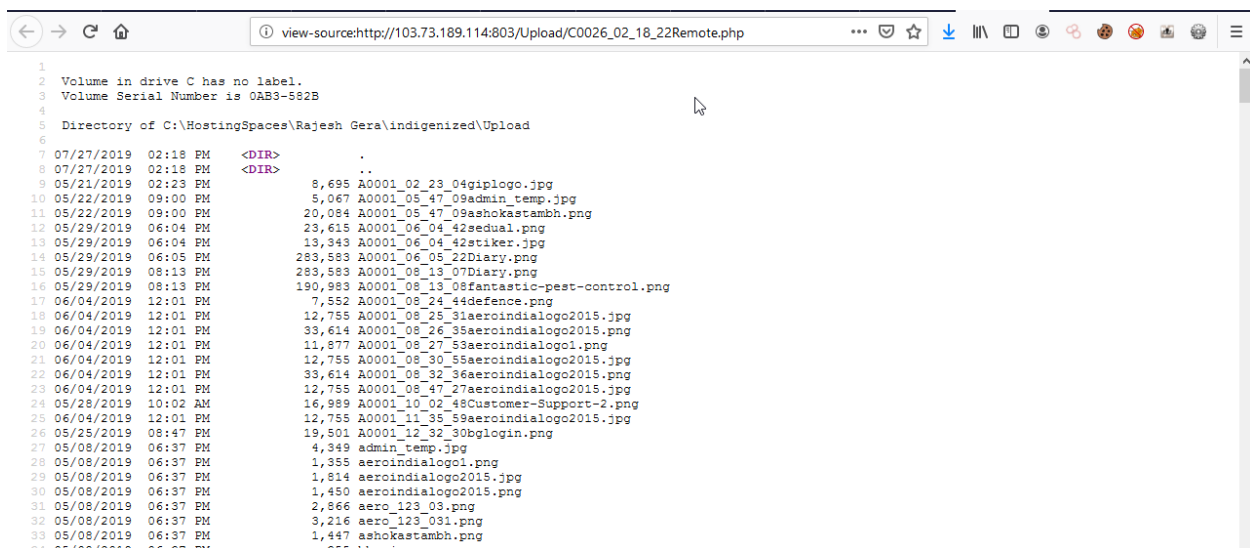
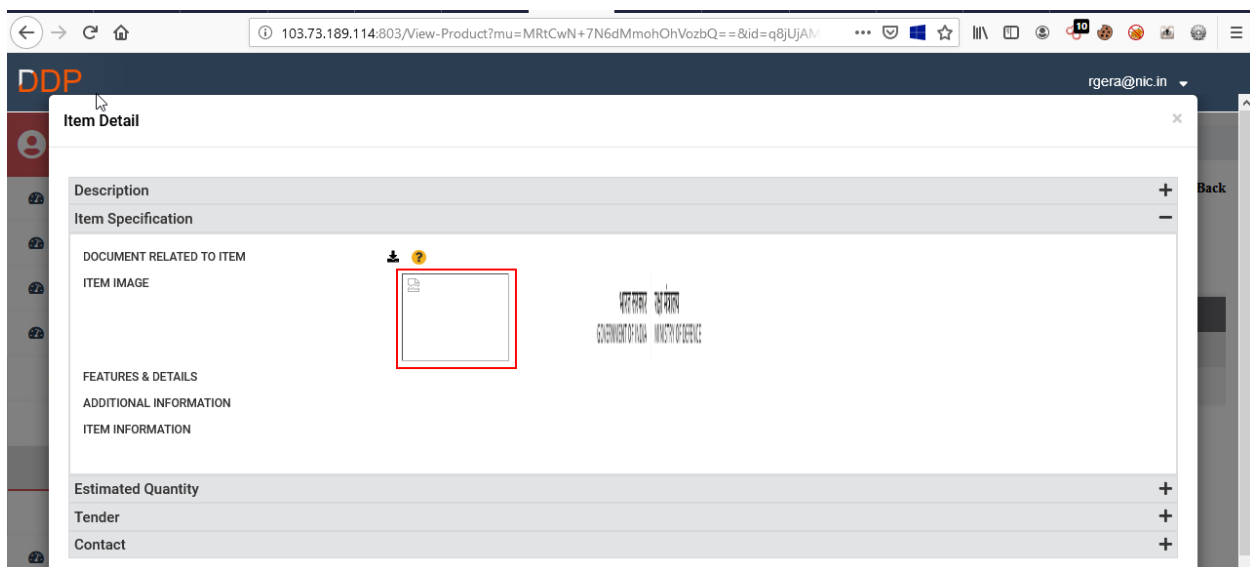
Please apply the Patch in all the parameters throughout the application

Vulnerable Point – 3

Arbitrary File Upload / Remote Code Execution		
Vulnerability Classification:	CVSS	10.0
	Impact	High
	Exploitability	Easy
	OWASP	A8
	Fix	Quick
Description:	Web applications allow users to upload files. Uploaded files may pose a significant risk if not handled correctly. A remote attacker could send a malicious request with a specially-crafted file, filename or mime type and execute arbitrary code.	
Impact:	<p>Uploaded malicious code can be executed in the server context or on the client side.</p> <ul style="list-style-type: none">• Server-side attacks: The web server can be compromised by uploading and executing a web-shell which can run commands, browse system files etc.• Client-side attacks: Uploading malicious files can make the website vulnerable to client-side attacks such as XSS or Cross-site Content Hijacking.	
Fix Recommendations:	<p>Following are the fix recommendations:</p> <ul style="list-style-type: none">• The application should use server-side input validation to ensure evasion techniques have not been used to bypass the whitelist filter.	
Location of Vulnerability are as Follows :		

S.No.	Affected Nodes	
3.	Affected URL	http://103.73.189.114:803/AddProduct?mu=MRTcWn+7N6dMmohOhVozbQ==&id=q8jUjAMoUEw6vX6gOSC5cG3EgqKJ5YFXsGD4vq6Y3Sx tkVOGn2vF5w==

Proof of Concept and steps of verification of vulnerability with screenshots:

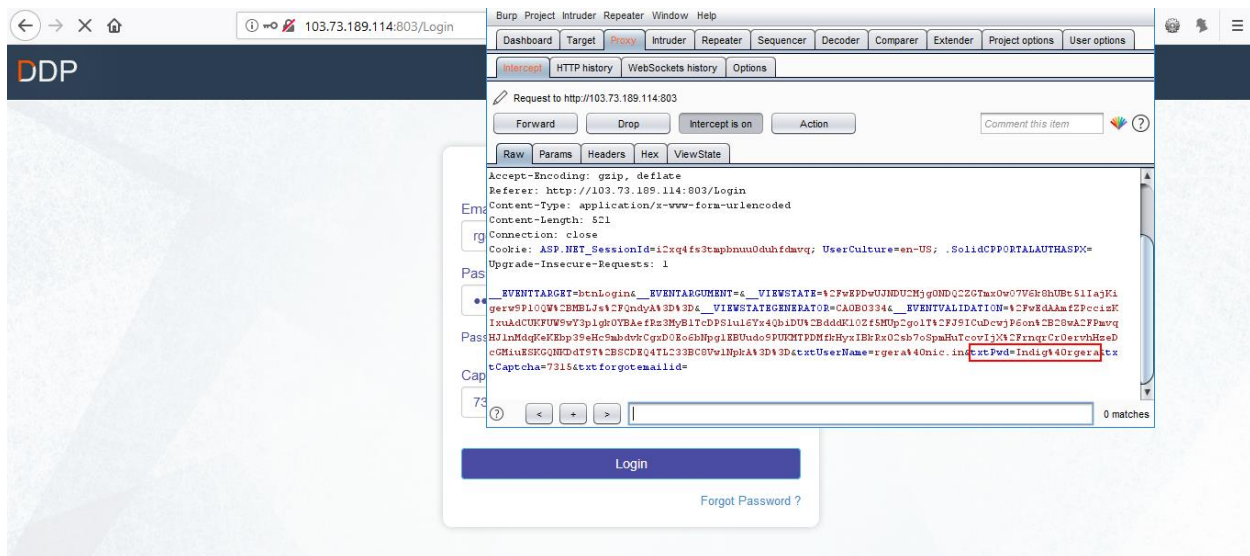


Vulnerable Point – 4

Clear Text Password Submission		
Vulnerability Classification:	CVSS	5.5
	Impact	Low
	Exploitability	Medium
	OWASP	A6
	Fix	Quick
Description:	User credentials are transmitted over an unencrypted channel without hashing. Hence sensitive information can be intercepted and can be used by the attacker for malicious purpose.	
Impact:	It allows a potential attacker to intercept sensitive information and use it for the malicious purpose.	
Fix Recommendations:	Following are the fix recommendations: <ul style="list-style-type: none">Because user credentials are considered sensitive information it should always be transferred to the server over an encrypted connection (HTTPS).	
Location of Vulnerability are as Follows :		

S.No.	Affected Nodes	
4.	Affected URL	http://103.73.189.114:803/Login

Proof of Concept and steps of verification of vulnerability with screenshots:



Vulnerable Point – 5

Missing Security Headers		
Vulnerability Classification:	CVSS	6.5
	Impact	Low
	Exploitability	Easy
	OWASP	PC-C8
	Fix	Quick
Description:	The lack of HTTP security header options opens the web application for multiple threats.	
Impact:	An attacker can perform cross site scripting, an also can do man-in-the-middle attacks, clickjacking	
Fix Recommendations:	Following are the fix recommendations: <ul style="list-style-type: none">Configure the remote web server to use secure http headers.	
Location of Vulnerability are as Follows :		

S.No.	Affected Nodes	
5.	Affected URL	http:// 103.73.189.114:803/Dashboard

Proof of Concept and steps of verification of vulnerability with screenshots:

The screenshot displays a web application interface on the left and a browser's network inspector on the right. The web application, titled 'DDP', has a navigation bar with 'Product Master', 'Indigenisation', and 'Add' buttons. The main content area shows a form for adding a product, with tabs for 'Product Description', 'Product Specification', 'Estimated Quantity & Price', and 'Testing & Certification'. The 'Product Description' tab is active, showing fields for 'NSN GROUP *', 'NSN GROUP CLASS *', and 'Item Code'. The 'NSN GROUP *' field is highlighted with a red box. The network inspector on the right shows a list of requests, with the first request (GET /AddProduct?mu=MRTcWn+7N6dMmohOhVozbQ==&id=q8jUjAMoU) selected. The response headers for this request are displayed, showing a 'Cache-Control: private' header and a 'Connection: close' header. A red box highlights the text 'Missing Security headers' in the response headers section.

DDP rgera@nic.in

Product Master Indigenisation Add

Select Company/Organization Mark with * is mandatory field.

Product Description Product Specification Estimated Quantity & Price Testing & Certification

Technical & Financial Support Tender Contact

NSN GROUP * ?

SELECT

NSN GROUP CLASS * ?

Item Code ?

200 GET 103.73.114.803 AddProduct?mu=MRTcWn+7N6dMmohOhVozbQ==&id=q8jUjAMoU document html 165.20 KB 16...

200 GET 103.73.114.803 css?family=Roboto:400,500,700 stylesheet css 6.67 KB 6.6...

304 GET 103.73.114.803 bootstrap.css stylesheet css cached 12...

304 GET 103.73.114.803 style.css stylesheet css cached 85...

304 GET 103.73.114.803 all.min.css stylesheet css cached 53...

28 requests 1.67 MB / 1.32 MB transferred Finish: 4.01 s DOMContentLoaded: 3.41 s

Headers Cookies Params Response Timings Stack Trace

Response headers (236 B) Raw headers

Cache-Control: private

Connection: close

Content-Length: 168925

Content-Type: text/html; charset=utf-8

Date: Tue, 09 Jul 2019 11:46:18 GMT

Server: Microsoft-IIS/8.5

Vary: Accept-Encoding

X-Powered-By: ASP.NET

Missing Security headers

Request headers (670 B) Raw headers

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8

Accept-Encoding: gzip, deflate

Accept-Language: en-US,en;q=0.5

Cache-Control: max-age=0

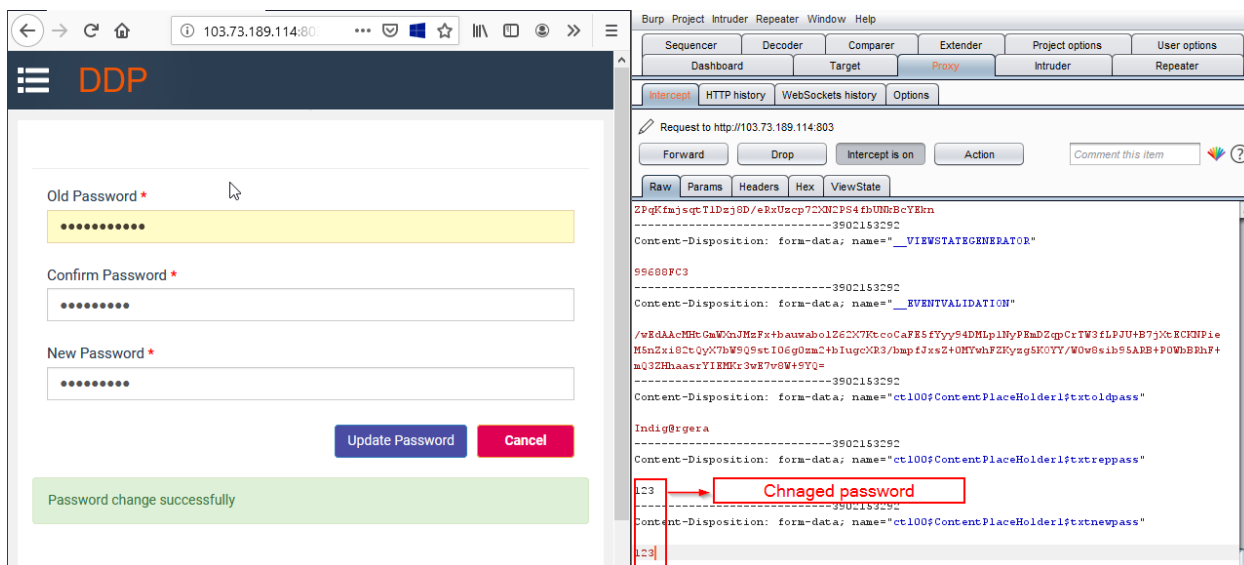
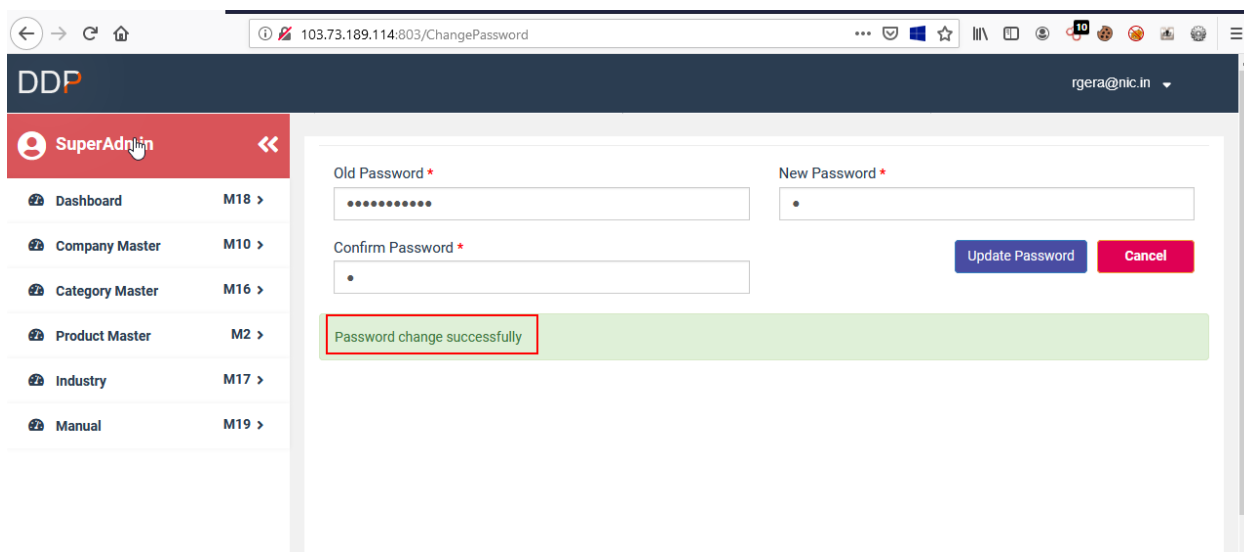
Connection: keep-alive

Vulnerable Point – 6

Weak Password Policy		
Vulnerability Classification:	CVSS	5.3
	Impact	Low
	Exploitability	Easy
	OWASP	A2
	Fix	Quick
Description:	Passwords are the weakest link in the security chain. If a weak password policy is implemented an attacker can guess the password easily.	
Impact:	A successful attack can allow attacker to impersonate any user.	
Fix Recommendations:	Following are the fix recommendations: <ul style="list-style-type: none">• User account should be locked for certain time after more than 5 wrong attempts.	
Location of Vulnerability are as Follows :		

S.No.	Affected Nodes	
6.	Affected URL	http://103.73.189.114:803/ChangePassword

Proof of Concept and steps of verification of vulnerability with screenshots:



Vulnerable Point – 7

Trace Method Enabled		
Vulnerability Classification:	CVSS	5.8
	Impact	Low
	Exploitability	Medium
	OWASP	A5
	Fix	Quick
Description:	In the presence of other cross-domain vulnerabilities, sensitive header information could be read that support the HTTP TRACE method.	
Impact:	Attackers can run a cross-site-scripting attack on your server and get session cookies even if the cookies are marked HttpOnly and secure.	
Fix Recommendations:	Following are the fix recommendations: <ul style="list-style-type: none">• Disable the TRACE and TRACK methods.	
Location of Vulnerability are as Follows :		

S.No.	Affected Nodes	
7.	Affected URL	http://103.73.189.114:803/Dashboard

Proof of Concept and steps of verification of vulnerability with screenshots:

The screenshot displays the Burp Suite interface. At the top, the menu bar includes 'Burp', 'Project', 'Intruder', 'Repeater', 'Window', and 'Help'. Below the menu is a toolbar with tabs: 'Dashboard', 'Target', 'Proxy', 'Intruder', 'Repeater', 'Sequencer', 'Decoder', 'Comparer', 'Extender', 'Project options', and 'User options'. A sequence of numbered tabs (1 to 52) is visible below the toolbar. The 'Target' tab is active, showing a target URL: 'http://103.73.189.114:803'. The 'Request' pane on the left shows a raw HTTP request for an OPTIONS method. The 'Response' pane on the right shows a raw HTTP response with a 200 OK status and various headers, including 'Allow: OPTIONS, TRACE, GET, HEAD, POST'.

Request

```
OPTIONS /Dashboard HTTP/1.1
Host: 103.73.189.114:803
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:68.0) Gecko/20100101 Firefox/68.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: close
Cookie: UserCulture=en-US; ASP.NET_SessionId=u2jblip50y4quby0ciy0em0k
Upgrade-Insecure-Requests: 1
```

Response

```
HTTP/1.1 200 OK
Allow: OPTIONS, TRACE, GET, HEAD, POST
Server: Microsoft-IIS/8.5
Public: OPTIONS, TRACE, GET, HEAD, POST
X-Powered-By: ASP.NET
Date: Mon, 29 Jul 2019 05:43:10 GMT
Connection: close
Content-Length: 0
```

Vulnerable Point – 8

Version Disclosure		
Vulnerability Classification:	Impact	Low
	Exploitability	Easy
	OWASP	A3
	Fix	Quick
Description:	Attacker can gain an understanding of the systems and potentially develop attacks targeted at the specific version.	
Impact:	This information might help an attacker gain a greater understanding of the systems in use and potentially develop further attacks targeted at the specific version.	
Fix Recommendations:	Following are the fix recommendations: <ul style="list-style-type: none">• Configure your web server to prevent information leakage from the SERVER header of its HTTP response	
Location of Vulnerability are as Follows :		

S.No.	Affected Nodes	
8.	Affected URL	http://103.73.189.114:803/Dashboard

Proof of Concept and steps of verification of vulnerability with screenshots:

The screenshot shows a web application interface on the left and its network traffic on the right. The application is titled "DDP" and has a navigation bar with "Product Master", "Indigenisation", and "Add". The main content area has a "Select Company/Organization" dropdown and a "Back" button. Below this are tabs for "Product Description", "Product Specification", "Estimated Quantity & Price", and "Testing & Certification". The "Product Description" tab is active, showing fields for "NSN GROUP", "NSN GROUP CLASS", and "Item Code". The network traffic on the right shows a GET request to the URL `103.73.189.114:803/AddProduct?mu=MRTcWn+7N6dMmohOhVozbQ==&id=q8jUjAMoU...`. The response headers include "Server: Microsoft-IIS/8.5" and "X-Powered-By: ASP.NET", which are highlighted with a red box and labeled "Version Disclosure".

The screenshot shows a server error page with the following content:

Server Error in '/' Application.

A potentially dangerous Request.QueryString value was detected from the client (id='...bqhcOo07A=<script>alert(4)</sc...').

Description: ASP.NET has detected data in the request that is potentially dangerous because it might include HTML markup or script. The data might represent an attempt to compromise the security of your application, such as a cross-site scripting attack. If this type of input is appropriate in your application, you can include code in a web page to explicitly allow it. For more information, see <http://go.microsoft.com/fwlink/?LinkID=212874>.

Exception Details: System.Web.HttpRequestValidationException: A potentially dangerous Request.QueryString value was detected from the client (id='...bqhcOo07A=<script>alert(4)</sc...').

Source Error:

An unhandled exception was generated during the execution of the current web request. Information regarding the origin and location of the exception can be identified using the exception stack trace below.

Stack Trace:

```
[HttpRequestValidationException (0x80004005): A potentially dangerous Request.QueryString value was detected from the client (id='...bqhcOo07A=<script>alert(4)</sc...')]
System.Web.HttpRequest.ValidateString(String value, String collectionKey, RequestValidationSource requestCollection) +11969159
System.Web.HttpRequest.ValidateHttpValueCollection(HttpValueCollection collection, RequestValidationSource requestCollection) +200
System.Web.HttpRequest.get_QueryString() +69
System.Web.UI.Page.DeterminePostBackMode() +85
System.Web.UI.Page.ProcessRequestMain(Boolean includeStagesBeforeAsyncPoint, Boolean includeStagesAfterAsyncPoint) +9458
System.Web.UI.Page.ProcessRequest(Boolean includeStagesBeforeAsyncPoint, Boolean includeStagesAfterAsyncPoint) +345
System.Web.UI.Page.ProcessRequest(HttpContext context) +70
System.Web.CallHandlerExecutionStep.System.Web.HttpApplication.IExecutionStep.Execute() +790
System.Web.HttpApplication.ExecuteStepImpl(IExecutionStep step) +195
System.Web.HttpApplication.ExecuteStep(IExecutionStep step, Boolean& completedSynchronously) +88
```

Version Information: Microsoft .NET Framework Version: 4.0.30319; ASP.NET Version: 4.7.3282.0

Vulnerable Point – 9

Outdated jQuery		
Vulnerability Classification:	CVSS	4.8
	Impact	Low
	Exploitability	Medium
	OWASP	A9
	Fix	Quick
Description:	jQuery before 3.4.1 is vulnerable to Cross-site Scripting (XSS) attacks and prototype pollution. https://snyk.io/vuln/npm:jquery	
Impact:	A cross-domain Ajax request performed without the data Type option, can cause text/JavaScript responses to be executed.	
Fix Recommendations:	Following are the fix recommendations: <ul style="list-style-type: none">Update to latest stable version	
Location of Vulnerability are as Follows :		

S.No.	Affected Nodes	
9.	Affected URL	http://103.73.189.114:803/Dashboard

Proof of Concept and steps of verification of vulnerability with screenshots:

The screenshot shows a web application dashboard for 'DDP' with a user 'SuperAdmin'. A 'Wappalizer' overlay is visible, listing detected vulnerabilities. The 'JavaScript Libraries' section highlights 'jQuery 1.12.4' with a red box. The dashboard also displays 'ORGANIZATION 16' and 'ITEMS UPLOADED 205'.

Wappalizer Detected Vulnerabilities:

- Font Script: Google Font API
- Web Framework: Microsoft ASP.NET, Bootstrap
- Web Server: IIS
- JavaScript Graphics: Google Charts
- Operating System: Windows Server
- JavaScript Libraries: jQuery 1.12.4, jQuery UI 1.9.2

ORGANIZATION PERFORMANCE ON ITEMS UPLOADED

A pie chart shows the distribution of items uploaded across different departments: BDL (29.3%), BEL, BEML, GRSE, HAL, and MDL. A bar chart shows the performance of 'P' and 'I' across different categories.

The screenshot shows the Snyk website, which provides a vulnerability database for various packages. The 'jQuery vulnerabilities' section is highlighted, showing the latest version (3.4.1) and the first published version (3 months ago). A table lists known vulnerabilities in the jQuery package, including Prototype Pollution, Denial of Service (DoS), Cross-site Scripting (XSS), and Cross-site Scripting (XSS).

jQuery vulnerabilities
JavaScript library for DOM operations
View on npm

Latest version: 3.4.1
First published: 8 years ago
Latest version published: 3 months ago

Continuously find & fix vulnerabilities like these in your dependencies. [Test and protect your applications](#)

Direct Vulnerabilities
Known vulnerabilities in the jQuery package. This does not include vulnerabilities belonging to this package's dependencies.

VULNERABILITY	VULNERABLE VERSIONS	2016 PATCH	PUBLISHED
Prototype Pollution	<3.4.0	Not available	27 Nov 2019
Denial of Service (DoS)	>=3.0.0 <3.4.0	Not available	28 Oct 2016
Cross-site Scripting (XSS)	<1.12.2, >=1.12.3 <2.2.2, >=2.2.3 <3.0.0	Not available	27 Nov 2016
Cross-site Scripting (XSS)	>=1.4.2 <1.8.2	Not available	20 Oct 2016
Cross-site Scripting (XSS)	>=1.7.3 <1.9.0	Not available	20 Oct 2016
Cross-site Scripting (XSS)	<1.6.3	Not available	20 Oct 2016

snykTestFeaturesVulnerability DBBlogPartnersPricingDocsAboutLog InSign Up

Test > jquery@1.12.4

Vulnerabilities2 via 2 pathsPackagejquery

Find, fix and prevent vulnerabilities in your code.
Test and protect my applications

IssuesDependencies

Severity

HighMediumLow

Status

OpenPatchedIgnored

MEDIUM SEVERITY

Cross-site Scripting (XSS)

Vulnerable module: jquery
Introduced through: jquery@1.12.4

Detailed paths

- Introduced through: jquery@1.12.4
Remediation: Upgrade to jquery@4.4.4

Overview
jquery is a JavaScript library. It makes things like HTML, document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers.
Affected versions of this package are vulnerable to Cross-site Scripting (XSS) attacks when a cross-domain ajax request is performed without the `dataType` option causing `$.ajax({dataType: 'script'})` responses to be executed.

Cross-site Scripting (XSS) vulnerability report

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Vulnerable Point – 10

Outdated JQuery UI		
Vulnerability Classification:	CVSS	4.8
	Impact	Low
	Exploitability	Medium
	OWASP	A9
	Fix	Quick
Description:	JQuery UI before 1.12.1 is vulnerable to Cross-site Scripting (XSS) attacks. https://snyk.io/vuln/npm:jquery-ui	
Impact:	An attacker can escaping the context of the web application and then delivers that data to its users along with other trusted dynamic content, without validating it and the browser unknowingly executes malicious script on the client side.	
Fix Recommendations:	Following are the fix recommendations: <ul style="list-style-type: none">• Update to latest stable version.	
Location of Vulnerability are as follows :		

S.No.	Affected Nodes	
1.	Affected URL	http://103.73.189.114:803/Dashboard

Proof of Concept and steps of verification of vulnerability with screenshots:

The screenshot shows a web application dashboard (DDP) with a Wappalizer overlay. The overlay lists detected technologies: Font Script (Google Font API), Web Framework (Microsoft ASP.NET, Bootstrap), Web Server (IIS), JavaScript Graphics (Google Charts), Operating System (Windows Server), and JavaScript Libraries (jQuery 1.12.4, jQuery UI 1.9.2). The jQuery UI 1.9.2 entry is highlighted with a red box. The dashboard also shows organization statistics (16 organizations, 205 items uploaded) and performance charts.

The screenshot shows the jQuery UI 1.12.1 vulnerability page on a security tool. The page displays 'Direct Vulnerabilities' for Cross-site Scripting (XSS) and a list of versions. The vulnerability details table shows three entries for XSS, all with 'Not available' for the SNYK patch. The versions table lists various jQuery UI versions, with the latest version 1.12.1 highlighted.

VULNERABILITY	VULNERABLE VERSIONS	SNYK PATCH	PUBLISHED
M Cross-site Scripting (XSS)	<1.10.0	Not available	13 Feb, 2017
M Cross-site Scripting (XSS) via Tooltip	<1.10.0	Not available	26 Dec, 2016
H Cross-site Scripting (XSS)	<1.12.0	Not available	21 Jul, 2016

VERSION	PUBLISHED	LICENSES
jquery-ui 1.12.1 LATEST	14 Sep, 2016	MIT
jquery-ui 1.12.0	08 Jul, 2016	MIT
jquery-ui 1.12.0-rc.2 PRE-RELEASE	21 Apr, 2016	MIT
jquery-ui 1.12.0-rc.1 PRE-RELEASE	17 Mar, 2016	MIT
jquery-ui 1.12.0-beta.1 PRE-RELEASE	23 Dec, 2015	MIT
jquery-ui 1.10.4	16 Mar, 2014	MIT
jquery-ui 1.10.5	16 Mar, 2014	MIT

Vulnerable Point – 11

Error Handling		
Vulnerability Classification:	CVSS	5.3
	Impact	Low
	Exploitability	Trivial
	OWASP	A5
	Fix	Quick
Description:	Page containing errors/warnings messages can disclose sensitive information like stack trace and full path.	
Impact:	This information might help an attacker gain a greater understanding of the systems in use and potentially develop further attacks targeted.	
Fix Recommendations:	Following are the fix recommendations: <ul style="list-style-type: none">• Disable Error Reporting at server-side.• Analyze and review the application code in order to handle unexpected errors. All errors should be handled server-side only.• Implement Global page.	
Location of Vulnerability are as follows :		

S.No.	Affected Nodes	
1.	Affected URL	http://103.73.189.114:803

Proof of Concept and steps of verification of vulnerability with screenshots

103.73.189.114:803/AddProduct?mu=MRtCwN+7N6dMmohOhVozbQ%3d%3d&id=q8UjAMoUEw6/

Server Error in '/' Application.

Value was either too large or too small for an Int16.

Description: An unhandled exception occurred during the execution of the current web request. Please review the stack trace for more information about the error and where it originated in the code.

Exception Details: System.OverflowException: Value was either too large or too small for an Int16.

Source Error:

An unhandled exception was generated during the execution of the current web request. Information regarding the origin and location of the exception can be identified using the exception stack trace below.

Stack Trace:

```
[OverflowException: Value was either too large or too small for an Int16.]
  System.Int16.Parse(String s, NumberStyles style, NumberFormatInfo info) +187
  System.Convert.ToInt16(String value) +60
  Admin_AddProduct.BindMasterSubCategoryTechLevel3() +148
  System.Web.UI.WebControls.ListControl1.OnSelectedIndexChanged(EventArgs e) +137
  System.Web.UI.Page.RaiseChangedEvents() +156
  System.Web.UI.Page.ProcessRequestMain(Boolean includeStagesBeforeAsyncPoint, Boolean includeStagesAfterAsyncPoint) +4593
```

Version Information: Microsoft .NET Framework Version:4.0.30319; ASP.NET Version:4.7.3282.0

103.73.189.114:803/Dashboard?mu=KQ5FIC8PdXE=&id=y8vILQ7QoA5vGVwst3JyC

Server Error in '/' Application.

A potentially dangerous Request.QueryString value was detected from the client (id='...bqhcOo07A=<script>alert(4)</sc...').

Description: ASP.NET has detected data in the request that is potentially dangerous because it might include HTML markup or script. The data might represent an attempt to compromise the security of your application, such as a cross-site scripting attack. If this type of input is appropriate in your application, you can include code in a web page to explicitly allow it. For more information, see <http://go.microsoft.com/fwlink/?linkID=212874>.

Exception Details: System.Web.HttpRequestValidationException: A potentially dangerous Request.QueryString value was detected from the client (id='...bqhcOo07A=<script>alert(4)</sc...').

Source Error:

An unhandled exception was generated during the execution of the current web request. Information regarding the origin and location of the exception can be identified using the exception stack trace below.

Stack Trace:

```
[HttpRequestValidationException (0x80004005): A potentially dangerous Request.QueryString value was detected from the client (id='...bqhcOo07A=<script>alert(4)</sc...')]
  System.Web.HttpRequest.ValidateString(String value, String collectionKey, RequestValidationSource requestCollection) +11969159
  System.Web.HttpRequest.ValidateHttpValueCollection(HttpValueCollection collection, RequestValidationSource requestCollection) +200
  System.Web.HttpRequest.get_QueryString() +69
  System.Web.UI.Page.DeterminePostBackMode() +85
  System.Web.UI.Page.ProcessRequestMain(Boolean includeStagesBeforeAsyncPoint, Boolean includeStagesAfterAsyncPoint) +9458
  System.Web.UI.Page.ProcessRequest(Boolean includeStagesBeforeAsyncPoint, Boolean includeStagesAfterAsyncPoint) +345
  System.Web.UI.Page.ProcessRequest() +75
  System.Web.UI.Page.ProcessRequest(HttpContext context) +70
  System.Web.CallHandlerExecutionStep.System.Web.HttpApplication.IExecutionStep.Execute() +790
  System.Web.HttpApplication.ExecuteStepImpl(IExecutionStep step) +195
  System.Web.HttpApplication.ExecuteStep(IExecutionStep step, Boolean& completedSynchronously) +88
```

Version Information: Microsoft .NET Framework Version:4.0.30319; ASP.NET Version:4.7.3282.0

General Recommendations As Per Audit Activity

- Hide sensitive resources from unauthorized users
- Implement custom 404 Not Found and error handling pages
- Remove broken links throughout the application
- Third party libraries and frameworks should be updated to their latest versions
- Use TLS 1.3 to transmit sensitive information between the browser and the server
- Use the strong encryption algorithms/cipher suites (3DES, RSA, Blowfish, AES)
- Set expiration dates on cookies to the shortest practical time
- Proper permissions should be set on Search Engine Optimization related files
- Implement best security practices for OS and Server hardening on production server

Mandatory Recommendations For Hosting The Website On Production Server

- Captcha should to be implemented on login pages
- Implement CSRF token on every form throughout the application
- Input validation should be implemented on all parameters on client side as well as server side
- Use TLS 1.2 or above to transmits sensitive information between the browser and the server
- Set the Secure and HttpOnly flags on the cookies to true
- TRACE method should be disabled
- Version Disclosure should be barred from the server side
- Create custom error handling pages for situations that are prone to error
- Remove unwanted commented code throughout the application
- Password should be saved as salted hash (SHA-256 or higher) in the database
- Implement HTTP Security Headers
- Implement CORS (Cross-Origin Resource Sharing) policy and whitelist domains needed for resource sharing if cross domain sharing is required

DETAILS OF TEAM ENGAGED FOR AUDIT

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