



# Vulnerability Assessment & Penetration Testing Sample Report

---

INFOPERCEPT  
Sample Report 2020

YOUR DATE HERE

---

COMPANY NAME  
Authored by: Your Name

 **Infopercept**

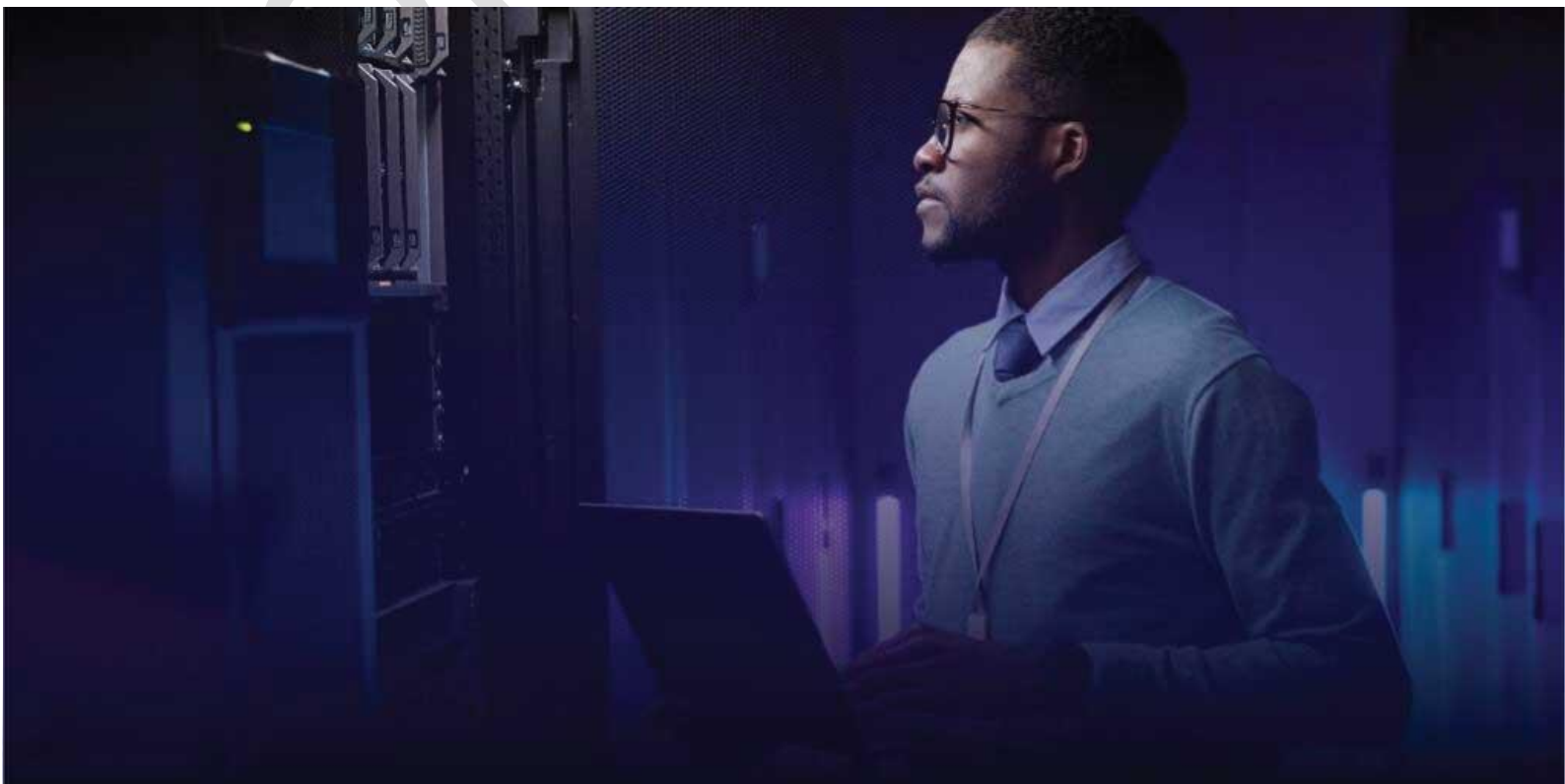
# Contents

<b>Disclaimer.....</b>	<b>4</b>
<b>Document Authorities .....</b>	<b>5</b>
Recipients.....	5
Document History.....	5
<b>Overview.....</b>	<b>6</b>
Sources of Information .....	6
Summary of Findings .....	6
<b>1. Executive Summary .....</b>	<b>7</b>
1.1 Introduction .....	7
1.2 Scope Of The Audit .....	7
<b>2. Report Format.....</b>	<b>9</b>
HOST Information:.....	9
Vulnerability Information:.....	9
<b>3. Vulnerabilities Discovered.....</b>	<b>11</b>
3.1 CISCO 2691 Router – 202.137.251.1.....	11
3.2 Terminal Server – 192.168.0.3.....	17
3.3 EOffice (Web) Server – 192.168.0.4 .....	19
<b>4. Auditor’s End Notes .....</b>	<b>26</b>
4.1 Distributed Database Architecture .....	26
4.2 Client Security .....	26

# Copyright

The copyright in this work is vested in Infopercept Consulting Pvt. Ltd, and the document is issued in confidence for the purpose for which it is supplied. It must not be reproduced in whole or in part or used for tendering or manufacturing purposes except under agreement or with the consent in writing of Infopercept Consulting Pvt. Ltd. and then only on condition that this notice is included in any such reproduction. No information as to the contents or subject matter of this document or any part thereof arising directly or indirectly there from shall be given orally or in writing or communicated in any manner whatsoever to any third party being an individual firm or company or any employee thereof without the prior consent in writing of Infopercept Consulting Pvt. Ltd.

© Infopercept Consulting Pvt. Ltd. 2020.



# Disclaimer

By accessing and using this report you agree to the following terms and conditions and all applicable laws, without limitation or qualification, unless otherwise stated, the contents of this document including, but not limited to, the text and images contained herein and their arrangement are the property of Infopercept Consulting Pvt Ltd (Infopercept). Nothing contained in this document shall be construed as conferring by implication, estoppel, or otherwise, any license or right to any copyright, patent, trademark or other proprietary interest of Infopercept or any third party. This document and its contents including, but not limited to, graphic images and documentation may not be copied, reproduced, republished, uploaded, posted, transmitted, or distributed in any way, without the prior written consent of Infopercept. Any use you make of the information provided, is at your own risk and liability. Infopercept makes no representation about the suitability, reliability, availability, timeliness, and accuracy of the information, products, services, and related graphics contained in this document. All such information products, services, related graphics and other contents are provided 'as is' without warranty of any kind. The relationship between you and Infopercept shall be governed by the laws of the Republic of India without regard to its conflict of law provisions. You and Infopercept agree to submit to the personal and exclusive jurisdiction of the courts located at Mumbai, India. You are responsible for complying with the laws of the jurisdiction and agree that you will not access or use the information in this report, in violation of such laws. You represent that you have the lawful right to submit such information and agree that you will not submit any information unless you are legally entitled to do so.



# Document Authorities

Company	ABC Corporation Ltd.			
Document Title	Application Security Audit Report			
Date				
Reference				
Scope	Application Security Assessment			
Classification	Public	Internal	Confidential	Secret
Document	Proposal	Deliverable	General	

## Recipients

Name	Title	Company
Mr. XYZ	CIO	ABC Corporation Ltd.

## Document History

Date	Version	Prepared by	Status
15/02/2021	1.0	Consultant 1	Draft Report
17/02/2021	1.1	Consultant 2	Final Report

# Overview

ABC Company Ltd. has appointed Infopercept Consulting Pvt. Ltd. a multidisciplinary company specializing in information security assessments to review its Network, with a perspective of evaluating the effectiveness of the technical controls by following ethical hacking procedures.

The information contained in this report is confidential and is intended only for use by the management of ABC Company Ltd. Outsourcing Services. We are not responsible to any other person/ party or for any decision of such person or party based on this report. It is hereby notified that any reproduction, copying or otherwise quoting of this report or any part thereof except for the purpose mentioned herein above can be done only with our prior written permission.

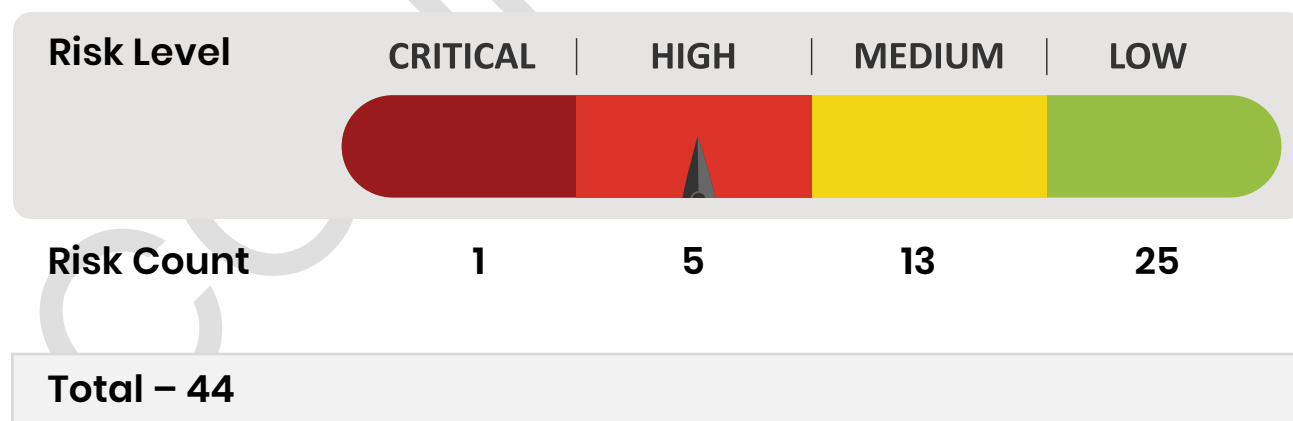
## Sources of Information

We have called for and obtained such data, information etc. as were necessary for the purpose of our assignment which has been made available to us by the management or been found in the public domain.

The information relating to the server details, ip-address, network devices, configuration etc. has been obtained from the Information Technology Team.

## Summary of Findings

The graph below shows a summary of the number of vulnerabilities found for each impact level for the Assessment. A significant number of high impact vulnerabilities were found that should be addressed as a priority.





# 1. Executive Summary

## 1.1 Introduction

Infopercept Cons Pvt. Ltd. conducted an Application Security audit activity for the internal network at ABC Corporation Ltd. The assignment was carried out by Infopercept technical team between the 1st to the 10th of February 2015 with the following goals:

- Identifying security vulnerabilities.
- Providing risk mitigation recommendations for the discovered vulnerabilities.
- Mapping the discovered vulnerabilities to ABC's Information Protection Policy.

### This audit report contains:

- The description of the IT Components and its business case
- The security vulnerabilities discovered as a result of the technical application security audit
- The security vulnerabilities discovered as a result of the application process audit
- The risk mitigation strategies that need to be implemented to ensure that the application meets information protection plan (IPP) control compliancy

## 1.2 Scope of The Audit

The vulnerability assessment has been conducted to provide a holistic picture of the security posture of the systems in the internal network at ABC Company Ltd. Outsourcing Services and with the aim to bring the level of security up to the level of current industry standards.

### The following list defines the servers to be scanned for vulnerabilities:

No.	IP Address	Operating System	Description
01	192.168.10.3	Windows Server	Terminal Server
02	192.168.10.4	Linux	Eoffice (Webserver)
03	192.168.10.6	Windows Server	HRMS (Webserver)
04	192.168.10.7	Linux	SDUWINDOWS (Development) - Test Server
05	192.168.10.11	Linux	sqlserver (Development)
06	192.168.10.12	Linux	SDU SVN
07	192.168.10.13 202.137.251.6 202.137.251.7	Windows Server	SDUWINDOWS2 (Webserver) (Development)
08	192.168.10.15	Windows Server	Windows Server (ADS)
09	192.168.10.17	Windows 7	CADSERVER2

The following list defines the network devices to be scanned for vulnerabilities:

No.	IP Address	Device details	Description
01	172.16.1.31	Switch	HP L3 Switch
02	172.16.1.10 202.137.251.3 202.137.249.3	Firewall	Cyber-roam Firewall
03	202.137.251.1	Router	Cisco 2691 Router



## 2. Report Format

Vulnerability assessment was carried out for each host listed in scope. The discovered vulnerabilities are arranged per host, beginning with the host information followed by the vulnerabilities for that system. Below is a description of how the vulnerabilities per host are listed: -

### HOST Information:

HOST Title – This title shows the scanned host’s role and its IP address as shown below

HOST ROLE: X.X.X.X

### Vulnerability Information:

Compliance of IP Address:	
Risk	
Abstract	
IPMG Control Violation	
Reference	
Ease of Exploitation	
Impact	
Recommendations	

**Vulnerability Title** – A short title that describes the vulnerability. For each vulnerability, the title bar is color coded for a quick identification of the risk level. Title bar color codes are as follows:

#### Risk Level & Color Code

CRITICAL
HIGH
MEDIUM
LOW
INFORMATION
Externally

- **Abstract** – Describes the flaw or bugs that cause the vulnerability.
- **IPMG Control Violation** – Provides the ABC IPMG control numbers that are violated.
- **Reference** – Describes the reference for the respective vulnerability found.
- **Ease of Exploitation** – Provides a metric for the skill level required to exploit the vulnerability.

Metric Skill-level	Metric Skill-level
Easy	Casual user
Medium	Computer-savvy individual
Hard	Determined hacker

#### The categories are:

- **Impact** – Describes the possible business impact to ABC if this vulnerability is successfully exploited by an attacker.
- **Recommendation** – Provides solutions or workarounds to mitigate the risk arising from this vulnerability.
- **Proof of Concept** – Screenshots / supporting evidence showing the vulnerability being exploited.

# 3. Vulnerabilities Discovered

## 3.1 CISCO 2691 Router – 202.137.251.1

### General Information

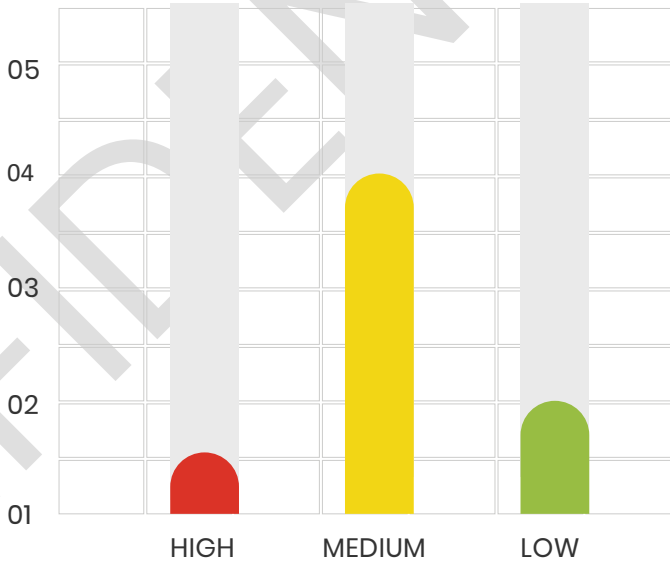
ABC Company Ltd. have implemented CISCO 2691 Router.

- Operating System – CISCO IOS 11-15 (identified the same via TCP/IP Fingerprinting Technique)
- The network handle is: ABC COMPANY LTD.
- Network description: ABC Company Ltd., Offshore Outsourcing Unit
- The ISP network handle is: NET-66-198-144-0-1
- ISP Network description: Tata Communications Ltd. PALO-PDI-TATAC

### Vulnerability overview

Below chart summarizes vulnerabilities observed on Cisco Router during assessment.

### Vulnerability overview @ Router



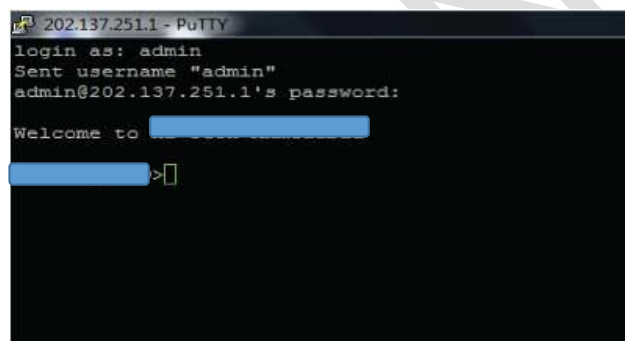
### Open Port Summary

The following summary shows the number of open ports running various services on the terminal server.

Protocol	Port No	Service	Protocol	Port No	Service
TCP	123	ntp	UDP		
	161	snmp			
	23	Telnet			

1. Clear Text Telnet Service is enabled on Router	
Applicability	TELNET (Cisco) on TCP port 23.
Risk	High
Abstract	We have observed that clear text telnet service was enabled on routers. Due to vulnerabilities present in clear text telnet service it was possible to have an unauthorized access on Router.
Ease of Exploitation	Medium
Ease of Exploitation	Hard
Impact	Due to the lack of encryption provided by the Telnet protocol, an attacker who is able to monitor a Telnet session would be able to view all of the authentication credentials and data passed in the session. The attacker could then attempt to gain access to the device using the authentication credentials extracted from the session and potentially gain access under the context of that user. Since Telnet is commonly used for network device administration this could gain the attacker an administrative level of access.
Recommendations	<p>We recommend that the Telnet service should be disabled. If remote administrative access is required then we recommend that a cryptographically secure alternative, such as SSH, should be used instead. If Telnet has to be used then we recommend that network filtering should be employed to restrict access to the service from only those specific devices that need the access.</p> <p>Telnet must be disabled on Cisco Router devices for each transport line that the service is enabled. If supported, the SSH protocol can also be enabled using the same command. This can be configured using the following command: transport input [none   ssh]</p>

2. UDP Constant IP Identification Field Fingerprinting Vulnerability	
Applicability	NA
Risk	Medium
Abstract	The host transmits UDP packets with a constant IP Identification field. This behavior may be exploited to discover the operating system and approximate kernel version of the vulnerable system.
Reference	CVE-2002-0510
Ease of Exploitation	Medium
Impact	<p>Normally, the IP Identification field is intended to be a reasonably unique value, and is used to reconstruct fragmented packets. It has been reported that in some versions of the Linux kernel IP stack implementation as well as other operating systems, UDP packets are transmitted with a constant IP Identification field of 0.</p> <p>By exploiting this vulnerability, a malicious user can discover the operating system and approximate kernel version of the host. This information can then be used in further attacks against the host.</p>
Recommendations	Please verify the dependency of UDP services and later on recommendation can be provided.

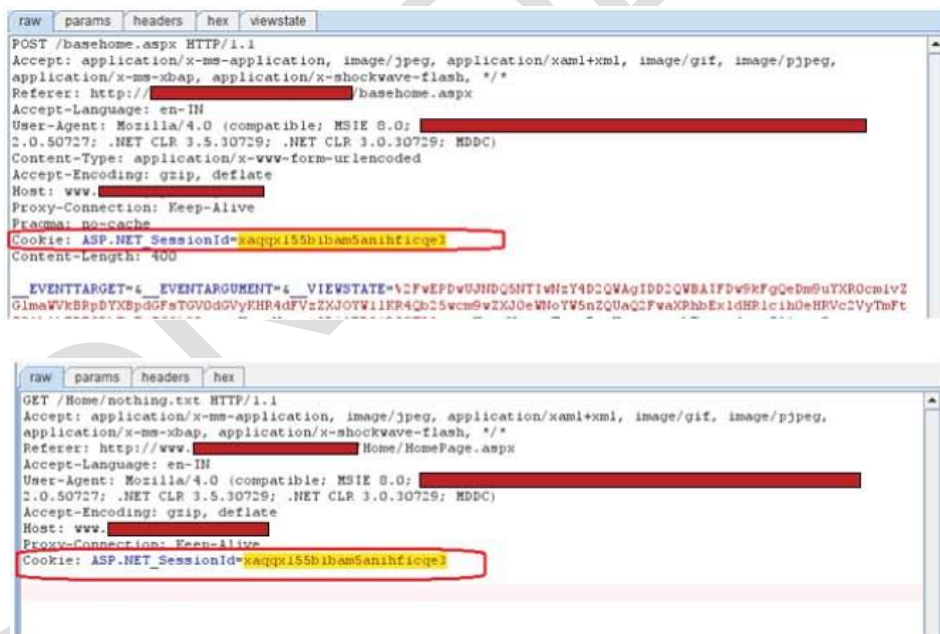


3. Remote Management Service Accepting Unencrypted Credentials Detected	
Applicability	Telnet on TCP port 23.
Risk	Low
Abstract	A remote management service that accepts unencrypted credentials was detected on target host. Services like Telnet, FTP, HTTP with basic auth are checked.
Reference	<p>Telnet Banner:</p> <p>Welcome to ABC Company Ltd. Ahmedabad</p> <p>User Access Verification</p> <p>Username:</p>
Ease of Exploitation	Medium
Impact	If an attacker is able to intercept network traffic, he will gain access to the service credentials.
Recommendations	Use alternate services that provide encryption if possible.

4. Improper Session Management	
Risk	Medium
Abstract	Proper authentication and session management is critical to web application security. Flaws in this area most frequently involve the failure to protect credentials and session tokens through their lifecycle.
IPMG Control Violation	
Reference	<a href="http://www.technicalinfo.net/papers/WebBasedSessionManagement.html">http://www.technicalinfo.net/papers/WebBasedSessionManagement.html</a> <a href="http://msdn.microsoft.com/enus/library/aa480476.aspx#pagexplained0002_aspnetforms">http://msdn.microsoft.com/enus/library/aa480476.aspx#pagexplained0002_aspnetforms</a>
Ease of Exploitation	Low
Impact	These flaws can lead to the hijacking of user or administrative accounts, undermine authorization and accountability controls, and cause privacy violations.
Recommendations	Regenerate a new session upon successful authentication. Any session token used prior to login should be discarded and only the new token should be assigned for the user till the user logs out. This session token should be properly invalidated when the user logs out.

### Proof of Concept

enter user ID and password, capture the request using proxy tool. Observe the session token.





5. Auto complete feature of the browser	
Risk	Medium
Abstract	For websites that user frequently visit, user find it helpful to have Firefox or Internet Explorer store commonly entered information such as usernames and passwords, email addresses, phone numbers and more. With the information stored, the web browser will then insert the information into the appropriate fields when completing forms. All mainstream web browsers have a built-in auto complete function.
IPMG Control Violation	
Reference	<a href="http://msdn.microsoft.com/library/default.asp?url=/workshop/author/forms/autocomplete_ovr.asp#security">http://msdn.microsoft.com/library/default.asp?url=/workshop/author/forms/autocomplete_ovr.asp#security</a> <a href="https://community.broadcom.com/home">https://community.broadcom.com/home</a>
Ease of Exploitation	Low
Impact	Password can be steeled from auto complete feature
Recommendations	Set autocomplete to OFF. < form autocomplete="off"> - for all form fields,< input autocomplete="off" /> - for just one field

### Proof of Concept

Go to login page enter user credentials and click on submit button. Observe the popup box will appear asking for saving the password.



6. Password staying in browser memory	
Risk	Low
Abstract	The request on the login page containing the username and password of the user is also stored in the browser's memory. The browser's memory can be read with the use of memory reading tools. In this application the encryption is same every time for a particular password, so if a user left his browser window open after logout, an adversary can steal the password from the memory.
IPMG Control Violation	
Reference	<a href="https://owasp.org/index.php/Cryptography">https://owasp.org/index.php/Cryptography</a> <a href="https://owasp.org/index.php/Guide_to_Cryptography">https://owasp.org/index.php/Guide_to_Cryptography</a>
Ease of Exploitation	Low
Impact	Password can be gained by an attacker
Recommendations	<p>The password can be read from the memory if it is being sent in clear text. Using the salted hash technique for password transmission will solve this issue.</p> <ul style="list-style-type: none"> <li>Do not create cryptographic algorithms. Only use approved public algorithms such as AES, RSA public key cryptography, and SHA-256 or better for hashing</li> <li>Do not use weak algorithms, such as MD5 / Sha1. Favour safer alternatives, such as SHA-256 or better</li> <li>Ensure that encryption is random</li> <li>Ensure that encrypted data stored on disk is not easy to decrypt</li> </ul>

## Proof of Concept

Login into the application with valid username and password and browse the application. Now, log out from the application and leave the browser window open. Now Run the browser memory reading tool to read the browser's memory and observe that the username and password is visible in clear text.

Offset	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
001598E0	56	79	4B	48	52	34	64	46	56	7A	5A	58	4A	4F	59	57	VyKHR4dFVzZXJOYW
001598F0	31	6C	4B	52	34	51	62	32	35	77	63	6D	39	77	5A	58	11KR4Qb25wcm9wZX
00159900	4A	30	65	57	4E	6F	59	57	35	6E	5A	51	55	61	51	32	J0eWNoYW5nZQZUaQ2
00159910	46	77	61	58	52	68	62	45	78	6C	64	48	52	6C	63	69	FwaXRhbExldHRlci
00159920	68	30	65	48	52	56	63	32	56	79	54	6D	46	74	5A	53	h0eHRVc2VyTmFtZS
00159930	6C	6B	41	68	45	50	45	47	52	6B	46	67	46	6D	5A	47	1uAePEPCRUeFwZG
00159940	51	25	33	44	26	74	78	74	55	73	65	72	4E	61	6D	65	Q%3D&txtUserName
00159950	3D	4F	50	31	41	45	52	4F	31	44	49	53	54	32	33	26	=OP1AERO1DIST23&
00159960	74	78	74	55	73	65	72	4E	61	6D	65	5F	54	65	78	74	txtUserName_Text
00159970	42	6F	78	57	61	74	65	72	6D	61	72	6B	45	78	74	65	BoxWatermarkExte
00159980	6E	64	65	72	5F	43	6C	69	65	6E	74	53	74	61	74	65	nder_ClientState
00159990	3D	26	74	78	74	50	61	73	73	77	6F	72	64	3D	4F	50	=&txtPassword=OP
001599A0	31	41	45	52	4F	31	44	49	53	54	32	33	26	74	78	74	1AERO1DIST23&txt
001599B0	50	61	73	73	77	6F	72	64	5F	54	65	78	74	42	6F	78	Password_TextBox
001599C0	57	61	74	65	72	6D	61	72	6B	45	78	74	65	6E	64	65	WatermarkExtende
001599D0	72	5F	43	6C	69	65	6E	74	53	74	61	74	65	3D	26	69	r_ClientState=&1
001599E0	62	74	6E	73	75	62	6D	69	74	3D	53	75	62	6D	69	74	btnsubmit=Submit
001599F0	0D	00	33	00	D2	01	08	00	43	00	3A	00	5C	00	44	00	3.0.0.0.C:\N.D.
00159A00	6F	00	63	00	75	00	6D	00	65	00	6E	00	74	00	73	00	o.c.u.m.e.n.t.s.
00159A10	20	00	61	00	6E	00	64	00	20	00	53	00	65	00	74	00	a.n.d. .S.e.t.
00159A20	74	00	69	00	6E	00	67	00	73	00	5C	00	41	00	64	00	t.i.n.g.s.\N.A.d.
00159A30	6D	00	69	00	6E	00	69	00	73	00	74	00	72	00	61	00	m.i.n.i.s.t.r.a.
00159A40	74	00	6F	00	72	00	5C	00	44	00	65	00	73	00	6B	00	t.o.r.N.D.e.s.k.
00159A50	74	00	6F	00	70	00	00	00	05	00	0D	00	A7	01	08	00	t.o.p.p.r.i.v.a.t.e
00159A60	00	00	00	00	40	56	60	77	90	9A	15	00	F8	9E	15	00	...@V'w'w'w'w'w'
00159A70	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	...
00159A80	05	00	05	00	BC	01	08	00	00	00	00	00	C8	58	60	77	...EX'w
00159A90	05	00	05	00	BC	01	08	00	00	00	00	00	C8	58	60	77	...

## Main Report – Servers

### 3.2 Terminal Server – 192.168.0.3

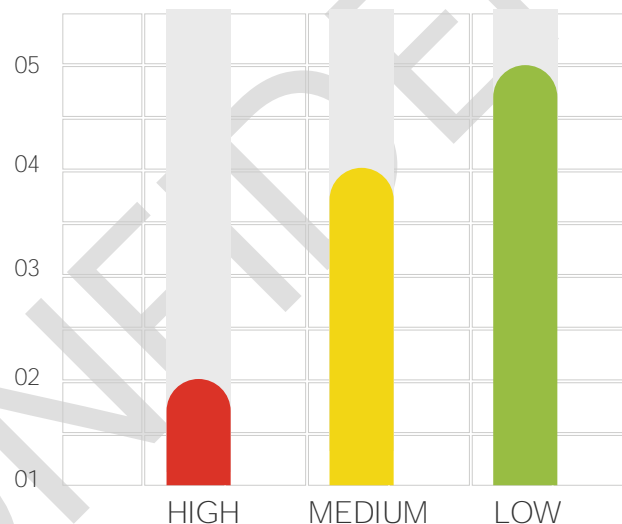
#### General Information

##### Terminal server is hosted on windows platform.

- Operating System: Windows Server 2008 R2 Standard 7601 Service Pack 1 (Windows Server 2008 R2 Standard 6.1)
- Database Hosted: Microsoft SQL Server 2008 R2 SP1
- FQDN: TERMINALSRV.ABC Company Ltd.os.net
- Ethernet card: 80:c1:6e:62:cf:48: Hewlett Packard

#### Vulnerability overview

Below chart summarizes vulnerabilities observed on terminal server during assessment.



## Open Port Summary

The following summary shows the number of open ports running various services on the terminal server.

Protocol	Port No	Service	Protocol	Port No	Service
TCP	80	http	UDP		
	135	Microsoft Windows RPC (epmap)			
	139	netbios-ssn			
	389	LDAP			
	443	ssl/http			
	5900	vnc server			
	7080	web server via TLS VI			
	7444				
	8443				
	10443				
	21100				
	8080				
	10000				
	27354				
	47001	Apache Tomcat			
	64351	Backup Agent			

## Vulnerabilities Discovered

1. VMware Security Updates for vCenter Server	
Applicable to	192.168.10.3 (tcp/443)
Risk	Critical
Abstract	The remote host has a virtualization management application installed that is affected by multiple vulnerabilities.
Reference	CVE CVE-2012-2733 CVE CVE-2012-4534 CVE CVE-2013-3107
Ease of Exploitation	High
Impact	<p>The version of VMware vCenter installed on the remote host is 5.1 prior to update 1. It therefore is potentially affected by the following vulnerabilities:</p> <ul style="list-style-type: none"> <li>When deployed in an environment that uses Active Directory with anonymous LDAP binding enabled, VMware vCenter doesn't properly handle login credentials. (CVE-2013-3107)</li> <li>The bundled version of Oracle JRE is earlier than 1.6.0_37 and thus, is affected by multiple security issues.</li> <li>The bundled version of Apache Tomcat is affected by multiple issues. (CVE2012-2733, CVE-2012-4534)</li> </ul>
Recommendations	The workaround is to discontinue the use of AD anonymous LDAP binding if it is enabled in your environment. AD anonymous LDAP binding is not enabled by default. We recommend upgrading VMware vCenter 5.1 update 1 or later.

2. VMware vCenter Server NFC Protocol Code Execution (VMSA-2013-0003)	
Applicable to	192.168.10.3 (tcp/443)
Risk	High
Abstract	The remote host has a virtualization management application installed that is affected by code execution vulnerability.
Reference	CVE: CVE-2013-1659
Ease of Exploitation	Medium
Impact	The version of VMware vCenter installed on the remote host is 4.0 before update 4b, 5.0 before update 2, or 5.1 before 5.1.0b. Such versions are potentially affected by a denial-of-service vulnerability due to an issue in web service logging. By exploiting this flaw, a remote, unauthenticated attacker could crash the affected host.
Recommendations	To reduce the likelihood of exploitation, vSphere components should be deployed on an isolated management network. We recommend upgrading VMware vCenter 5.1 update 1 or later.

### 3.3 EOffice (Web) Server – 192.168.0.4

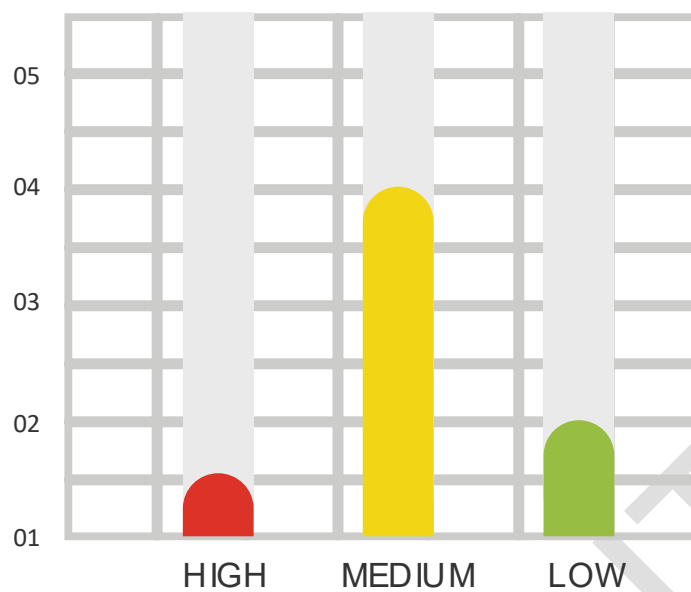
#### General Information

##### Terminal server is hosted on linux platform.

- Operating System: Linux 2.6.9 – 2.6.30
- The remote web server type is : Apache/2.2.0 (Unix) PHP/4.4.2
- The remote host is running a Backup Agent that uses the Network Data Management Protocol (NDMP)
- Remote operating system : KYOCERA Printer Linux Kernel 2.6, Method : SinFP
- SSH version : SSH-1.99-OpenSSH\_3.9p1, SSH supported authentication : publickey,gssapi-withmic,password
- The remote web server type is : Apache/2.2.0 (Unix) PHP/4.4.2
- We were able to identify the following PHP version information : Version : 4.4.2, Source : Server: Apache/2.2.0 (Unix) PHP/4.4.2, Source : http://192.168.10.4/ver2/info.php
- MYSQL server information: Version : 4.0.25-log, Protocol : 10 ,Server Status :
- SERVER\_STATUS\_AUTOCOMMIT Server Capabilities :
  - CLIENT\_LONG\_FLAG (Get all column flags)
  - CLIENT\_CONNECT\_WITH\_DB (One can specify db on connect)
  - CLIENT\_COMPRESS (Can use compression protocol)
  - CLIENT\_TRANSACTIONS (Client knows about transactions)

## Vulnerability overview

Below chart summarizes vulnerabilities observed on terminal server during assessment.



## Open Port Summary

The following summary shows the number of open ports running various services on the web server.

Protocol	Port No	Service	Protocol	Port No	Service
TCP	80	TCP	UDP	123	NTP
	3306	MYSQL		111	rpcbind
	22	SSH		904	RPC
	21	FTP			
	111	sunrpc ONC RPC portmapper			
	113	ident			
	199	smux			
	10000	ndmp			
	907	RPC			



1. Linux Multiple statd Packages Remote Format String	
Applicable to	192.168.10.4 (udp/904)
Risk	Critical
Abstract	The remote service is vulnerable to a buffer overflow.
Reference	CVE CVE-2000-0666 CVE CVE-2000-0800
Ease of Exploitation	Medium
Impact	rpc.statd in the nfs-utils package in various Linux distributions does not properly cleanse untrusted format strings, which allows remote attackers to gain root privileges. The remote statd service could be brought down with a format string attack - it now needs to be restarted manually. This means that an attacker may execute arbitrary code due to a bug in this daemon.
Recommendations	Upgrade to the latest version of rpc.statd.

## Vulnerabilities Discovered

2. Apache 2.2 < 2.2.15 Multiple Vulnerabilities	
Applicable to	192.168.10.4 (tcp/80) Version source: Server: Apache/2.2.0 Installed version : 2.2.0
Risk	Critical
Abstract	The remote web server is affected by multiple vulnerabilities.
Reference	CVE-2007-6750 CVE-2009-3555 CVE-2010-0408 CVE-2010-0425 CVE-2010-0434
Ease of Exploitation	Medium
Impact	<p>According to its banner, the version of Apache 2.2 installed on the remote host is older than 2.2.15. Such versions are potentially affected by multiple vulnerabilities:</p> <ul style="list-style-type: none"> <li>• A TLS renegotiation prefix injection attack is possible. (CVE-2009-3555)</li> <li>• The 'mod_proxy_ajp' module returns the wrong status code if it encounters an error which causes the back-end server to be put into an error state. (CVE-2010-0408)</li> <li>• The 'mod_isapi' attempts to unload the 'ISAPI.dll' when it encounters various error states which could leave callbacks in an undefined state. (CVE-2010-0425)</li> <li>• A flaw in the core sub-request process code can lead to sensitive information from a request being handled by the wrong thread if a multi-threaded environment is used. (CVE-2010-0434)</li> <li>• Added 'mod_reqtimeout' module to mitigate Slowloris attacks. (CVE2007-6750)</li> </ul>
Recommendations	We would recommend to update the Apache web server

### 3. MySQL Unsupported Version Detection

Applicable to	192.168.10.4 (tcp/80) Installed version : 4.0.25-log Supported versions : 5.1.x / 5.5.x End of support date : December 31, 2008
Risk	Critical
Abstract	The remote host is running an unsupported version of a database server
Reference	<a href="https://www.mysql.com/support/supportedplatforms/database.html">https://www.mysql.com/support/supportedplatforms/database.html</a> <a href="https://www.mysql.com/support/eol-notice.html">https://www.mysql.com/support/eol-notice.html</a>
Ease of Exploitation	Medium
Impact	According to its version, the installation of MySQL on the remote host is no longer supported. As a result, it is likely to contain security vulnerabilities.
Recommendations	Upgrade to a version of MySQL that is currently supported.

### 4. Apache 2.2 < 2.2.13 APR apr\_palloc Heap Overflow

Applicable to	192.168.10.4 (tcp/80)
Risk	Critical
Abstract	The remote web server is affected by buffer overflow vulnerability
Reference	CVE-2009-2412 OSVDB:56765 CWE:189
Ease of Exploitation	Medium
Impact	According to its self-reported banner, the version of Apache 2.2 installed on the remote host is older than 2.2.13. As such, it includes a bundled version of the Apache Portable Runtime (APR) library that contains a flaw in 'apr_palloc()' that could cause a heap overflow. Note that the Apache HTTP server itself does not pass unsanitized, userprovided sizes to this function so it could only be triggered through some other application that uses it in a vulnerable way.
Recommendations	Upgrade to Apache 2.2.13 or later.

5. CGI Generic SQL Injection	
Applicable to	192.168.10.4 (tcp/80)
Risk	High
Abstract	<p>A web application is potentially vulnerable to SQL injection</p> <p>+ The following resources may be vulnerable to SQL injection :</p> <p>+ The 'clslcUser_userId' parameter of the /ver2/lcForgotPassword.php CGI : /ver2/lcForgotPassword.php [clslcUser_userId='+convert(int,convert(varchar,0x7b5d))+']</p> <p>----- output -----</p> <pre>&lt;td width="100%" height="100%" valign="top"&gt; &lt;!-- HEADER (End) --&gt;&lt;br /&gt; &lt;b&gt;Fatal error&lt;/b&gt;: Error Executing Query: You have an error in your SQ L syntax. Check the manual that corresponds to your MySQL server versio n for the right syntax to use near '\ ' convert(int,convert(varchar,0x7b5 d)) \' at line 13 in &lt;b&gt;/home/eoffice/eoffice/ver2/classes/lcConnect.cl s.php&lt;/b&gt; on line &lt;b&gt;79&lt;/b&gt;&lt;br /&gt; ----- /ver2/lcForgotPassword.php [curYear=&amp;curSecond=&amp;curMonth=&amp;clslcUser_user Id='+convert(int, convert(varchar,0x7b5d))+&amp;clslcUser_returnUrl=lcforgot Password.php&amp;clslcUser_email=&amp;clslcUser_action=&amp;Submit=Submit&amp;curAtt Mark intime=&amp;curAttMarkouttime=&amp;curAttStatus=&amp;curDay=&amp;curHour=&amp;curMinu te=] ----- output ----- &lt;td width="100%" height="100%" valign="top"&gt; &lt;!-- HEADER (End) --&gt;&lt;br /&gt; &lt;b&gt;Fatal error&lt;/b&gt;: Error Executing Query: You have an error in your SQ L syntax. Check the manual that corresponds to your MySQL server versio n for the right syntax to use near '\ ' convert(int,convert(varchar,0x7b5 d)) \' at line 13 in &lt;b&gt;/home/eoffice/eoffice/ver2/classes/lcConnect.cl s.php&lt;/b&gt; on line &lt;b&gt;79&lt;/b&gt;&lt;br /&gt;</pre>
Reference	CWE:810, 89, 20, 77, 209, 203, 717, 713, 722, 751 & 801
Ease of Exploitation	Medium
Impact	By providing specially crafted parameters to CGIs, We were able to get an error from the underlying database. This error suggests that the CGI is affected by SQL injection vulnerability. An attacker may exploit this flaw to bypass authentication, read confidential data, modify the remote database, or even take control of the remote operating system.
Recommendations	Modify the relevant CGIs so that they properly escape arguments

6. HTTP TRACE / TRACK Methods Allowed	
Applicable to	192.168.10.4 (tcp/80)
Risk	Medium
Abstract	Debugging functions are enabled on the remote web server.
Reference	BID 9506 BID 9561 BID 11604 BID 33374 BID 37995 CVE CVE-2003-1567 CVE CVE-2004-2320 CVE CVE-2010-0386 XREF OSVDB:877 XREF OSVDB:3726 XREF OSVDB:5648 XREF OSVDB:50485 XREF CERT:288308 XREF CERT:867593 XREF CWE:16
Ease of Exploitation	Exploitable with Metasploit
Impact	The remote web server supports the TRACE and/or TRACK methods. TRACE and TRACK are HTTP methods that are used to debug web server connections.
Recommendations	Disable these methods. To disable these methods, add the following lines for each virtual host in your configuration file : RewriteEngine on RewriteCond %{REQUEST_METHOD} ^(TRACE TRACK) RewriteRule .* - [F] Alternatively, note that Apache versions 1.3.34, 2.0.55, and 2.2 support disabling the TRACE method natively via the 'TraceEnable' directive.

7. OpenSSH < 4.2 Multiple Vulnerabilities	
Applicable to	192.168.10.4 (tcp/22)
Risk	Low
Abstract	The remote SSH server has multiple vulnerabilities.
Reference	BID 14727 BID 14729 BID 19289 CVE CVE-2005-2797 CVE CVE-2005-2798 CVE CVE-2006-0393 XREF OSVDB:19141 XREF OSVDB:19142 XREF OSVDB:27745
Ease of Exploitation	Hard
Impact	<p>According to its banner, the version of OpenSSH installed on the remote host has the following vulnerabilities :</p> <ul style="list-style-type: none"> <li>• X11 forwarding may be enabled unintentionally when multiple forwarding requests are made on the same session, or when an X11 listener is orphaned after a session goes away. (CVE-2005-2797)</li> <li>• GSSAPI credentials may be delegated to users who log in using something other than GSSAPI authentication if 'GSSAPIDelegateCredentials' is enabled.(CVE-2005-2798)</li> <li>• Attempting to log in as a nonexistent user causes the authentication process to hang, which could be exploited to enumerate valid user accounts. Only OpenSSH on Mac OS X 10.4.x is affected. (CVE-2006-0393)</li> <li>• Repeatedly attempting to log in as a nonexistent user could result in a denial of service. Only OpenSSH on Mac OS X 10.4.x is affected. (CVE-2006-0393)</li> </ul>
Recommendations	<p>According to its banner, the version of OpenSSH installed on the remote host has the following vulnerabilities :</p> <p>Upgrade to OpenSSH 4.2 or later. For OpenSSH on Mac OS X 10.4.x, apply Mac OS X Security Update 2006-004.</p>

During course of the audit, the auditors identified certain points that could be potential security concerns. As these points relate to the application architecture as a whole, they have not been included as individual vulnerabilities.

This section gives a brief description of each of these points.

## 4.1 Distributed Database Architecture

The architecture of the application relies on a 'distributed database' mechanism, where each CFA has a portion of the database stored locally. All updates are made to this database and then synchronized using the SFTP server as a medium. This raises a few concerns:

- The local databases contain more information than is required for the CFA to do their job.
- There is no automated process for performing synchronization. It is not specified when updates are supposed to be pushed to the server. This can result in disparities in the information available across locations.
- The confidential information in the local databases is completely outside ABC's security control.

## 4.2 Client Security

The security of the client infrastructure appears to be very weak. Specifically:

- A large number of the client systems are legacy Windows 98 systems, which do not have adequate security mechanisms at the operating-system level.
- The use of dial-up and regular ISP connections for the synchronization of data results in ABC's data traveling over insecure networks. Despite the use of SSL encryption, this poses a significant risk. The use of a proper VPN solution is recommended.

No.	Action Item	Responsibility	Time-line	Rating
01	The application must be modified to validate all user inputs so that only legitimate data can be entered.			
02	The application must ensure that password fields are hidden behind asterisks to prevent involuntary disclosure of the password.			
03	The application should ask the user to enter the old password before being allowed to change it.			



## About INFOPERCEPT

Infopercept's vision and core values revolve around making organizations more secure through the core values of Honesty, Transparency and Knowledge, so as to enable them to make better informed decisions about their security practices & goals. With our synergistic vision to combine technical expertise and professional experience, we aim to further establish our place as a one stop shop for our clients and partners' cybersecurity and accreditation needs.

Our specialized core team comprises of experienced veterans, technical experts & security enthusiasts having good practical experience & thorough knowledge in the Cybersecurity domain, are abreast of the latest trends and security innovations; ensuring that you always get the best security approach & solutions for your specific business needs, exactly the way you want it to be.

## Imprint

© Infopercept Consulting Pvt. Ltd. 2021

## Publisher

H-1209, Titanium City Center,  
Satellite Road,  
Ahmedabad – 380 015,  
Gujarat, India.

## Contact Info

M: +91 9898857117

W: [www.infopercept.com](http://www.infopercept.com)

E : [sos@infopercept.com](mailto:sos@infopercept.com)

## Global Offices

### UNITED STATES OF AMERICA

+1 516 713 5040

### UNITED KINGDOM

+44 2035002056

### SRI LANKA

+94 702 958 909

### KUWAIT

+965 6099 1177

### INDIA

+91 9898857117

By accessing/ proceeding further with usage of this platform / tool / site / application, you agree with the Infopercept Consulting Pvt. Ltd.'s (ICPL) privacy policy and standard terms and conditions along with providing your consent to/for the same. For detailed understanding and review of privacy policy and standard terms and conditions, kindly visit [www.infopercept.com](http://www.infopercept.com) or refer our privacy policy and standard terms and conditions.

