



Industrial Training at

Beyonics Precision Malaysia Sdn.Bhd.

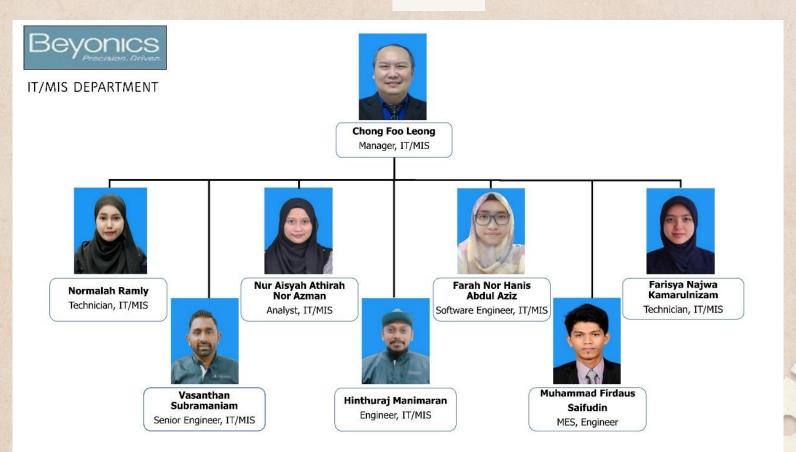
By Kabilashwaran A/L Selvarajan (A20EC0055)

Supervised by Mr. Vasanthan A/L Subramaniam and Dr. Zuriahati Mohd Yunos

About the company

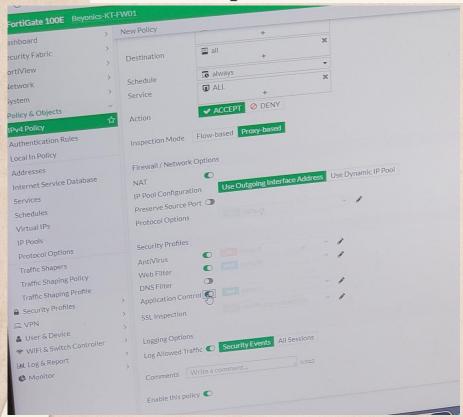
- Beyonics Pte Ltd, which was established in 1981 and has its headquarters in Singapore.
- Beyonics iPark was opened in 2015 at Indahpura iPark, Johor, Malaysia.
- The campus manufactures precision-engineered components with extensive expertise in tool design & fabraction, plastic injection molding, aluminium die casting, precision machining, polymer compounding, PCBA, product assembly and associated value adding processes.
- Beyonics iPark specializes in providing customized technical solutions by working together with its customers to analyse product design, offer material and manufacturing solutions, and implement optimized production and supply chain programs to fulfil customers' specific needs.

The team

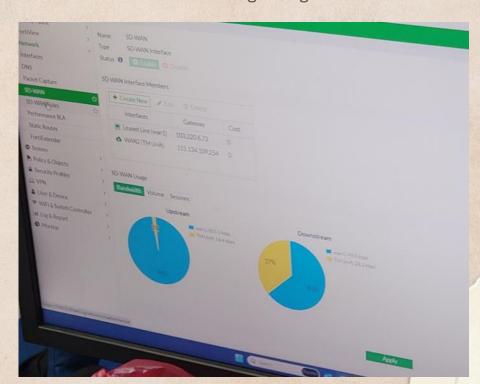


Project Objective

- Reduce the network operational costs by transitioning from MPLS to IPSec Tunnel.
- Implement SD-WAN load balancing method to optimize network performance.
- Distribute the network traffic equally across the network for enhanced resource utilization.
- Configure and integrate PPPOE for flexible and secure connectivity.
- Align security policies with industry best practices and address emerging cybersecurity challenges.
- Enhance the overall agility and robustness of the network infrastructure.
- Position the network for future scalability and adaptability.

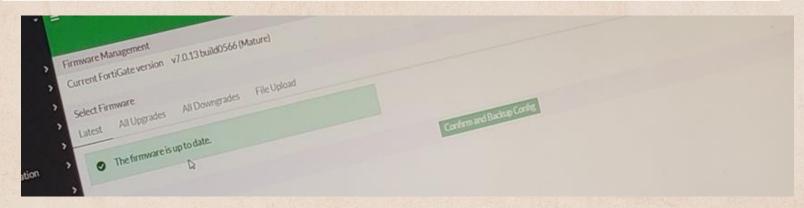


Load balancing configuration



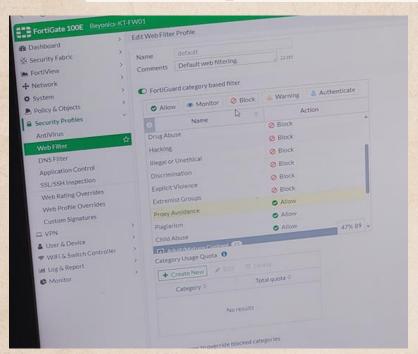
IPv4 Policy Configuration Page

IPV4 policies are applied with incoming and outgoing interface, source and destination, action, inspection mode, security policies, and logging.



Firewall update



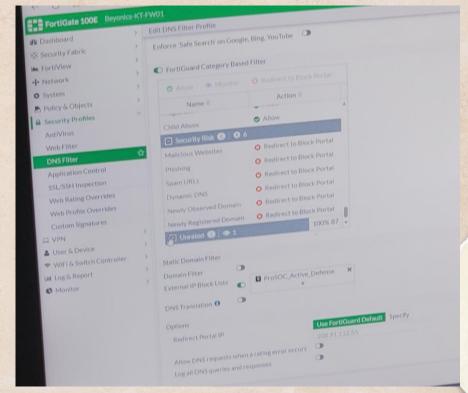


Web Filter configuration

In web filter, there was a category-based filter for the website where we can configure to allow, monitor or block the websites based on the categories.

DNS Filter configuration

DNS filtering also set which also has categories and subcategories-based filtering with allow, monitor, and block options.



Configuration of Cisco Switch

Configuration of Cisco Switch

- Configure Cisco 2960 Switch for the production area replacing an unmanaged switch
- Recover the password of the switch without losing the configuration

```
COM3 - PUTTY
    cold you like to enter the initial configuration dialog? [yes/no]: n
                 1726 Mar 1 1993 00:05:24 +00:00 config.text
                1919 Mar 1 1993 00:05:24 +00:00 private-config.text
                 192 Mar 1 1993 00:09:15 +00:00 c2960-lanbasek9-mz.122-50.
                2072 Mar 1 1993 00:00:03 +00:00 multiple-fs
 estimation filename [running-config]?
Mar 1 00:02:54.759: %LINK-5-CHANGED: Interface Vlanl, changed state to adminis
Mar 1 00:02:55.053: $SSH-5-ENABLED: SSH 1.99 has been enabled
```

```
switchport trunk native vlan 128
switchport trunk allowed vlan 128
Switchport mode trunk
interface GigabitEthernet0/2
switchport trunk native vlan 128
switchport trunk allowed vlan 128
 switchport mode trunk
interface Vlan1
 no ip address
 no ip route-cache
 interface Vlan128
  ip address 10.38.31.254 255.255.252.0
  no ip route-cache
 ip default-gateway 10.38.1.254
  no ip http server
  ip http secure-server
  no logging trap
  control-plane
  banner motd ^C
  Welcome to Beyonics Technology (iPark) Sdn Bhd
    line con 0
```

Welcome

Inventory

Management System

LOGIN

Login page of the system

USERNAME

PASSWORD

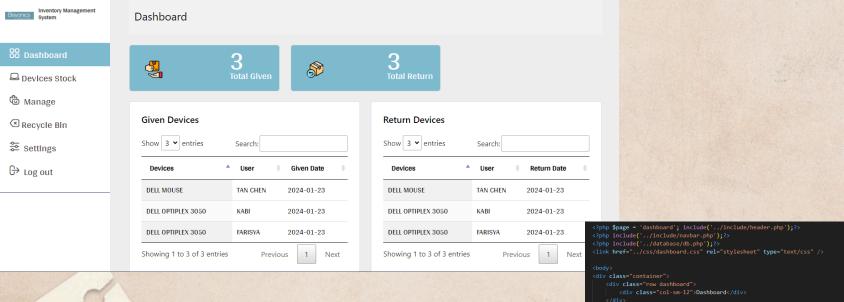
```
<div class="container-fluid">
<div class="row">
        <div class="col-sm-2" style="position: absolute; top: -175px; right: 20px;">
                <img id="logo beyonics" src="img/beyonics logot.png">
    <div class="col-sm-4">
            <div class="left">
                <h1 id="Beyonics_name" >Inventory</h1>
                <h3 id="tagline" >Management System</h3>
     <div class="col-sm-6">
            <div class="right">
                <h1 id="Welcome">Welcome</h1>
                <h1 id="instruction"></h1>
                    <form action="actions/login.php" method="post">
                        <input name="uname" type="text" class="field" placeholder="USERNAME" required><br>
                        <input name="pword" type="password"class="field" placeholder="PASSWORD" required><br>
                            <div class="col text-center">
                            <button class="btn btn-default" id="login_btn">LOGIN</button>
nclude('include/footer.php');?>
```

<div class="card">

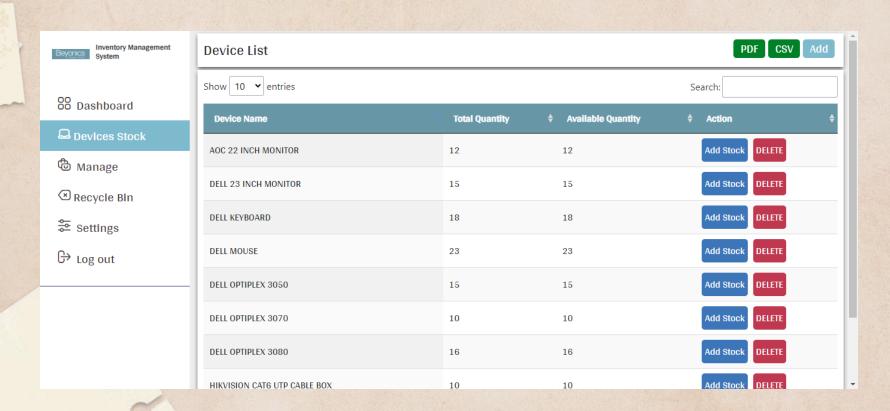
<div class="card-body">

\$sq1 = "SELECT * FROM clientorder";
if (\$result=mysqli_query(\$conn,\$sql)) {
\$rowcount=mysqli_num_rows(\$result);}?>

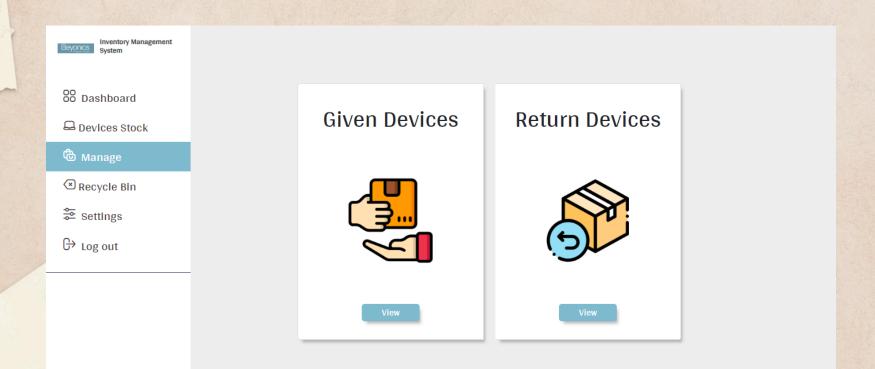
<?php echo " \$rowcount " . "
br



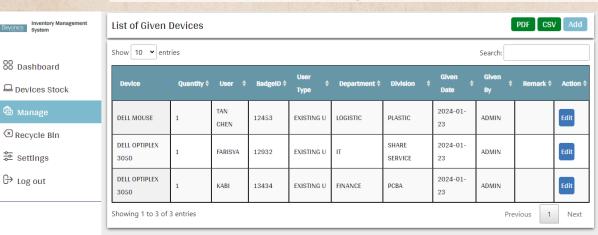
The dashboard page



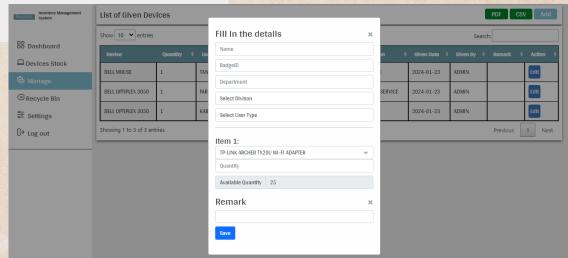
Devices Stock page

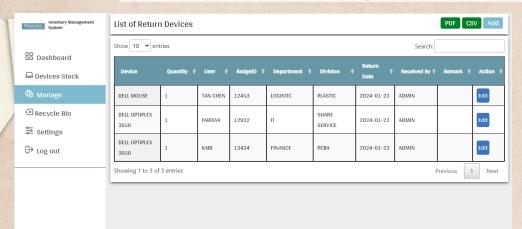


Manage Page

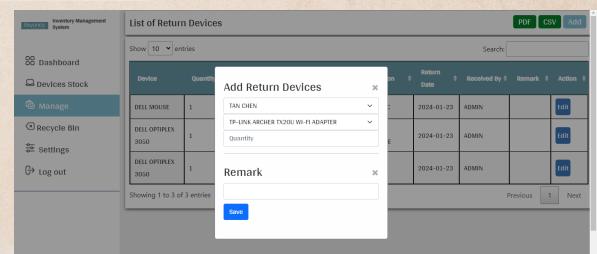


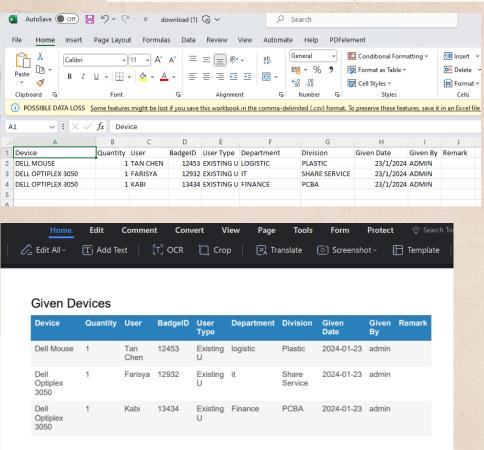
Given Devices Page





Return Devices Page



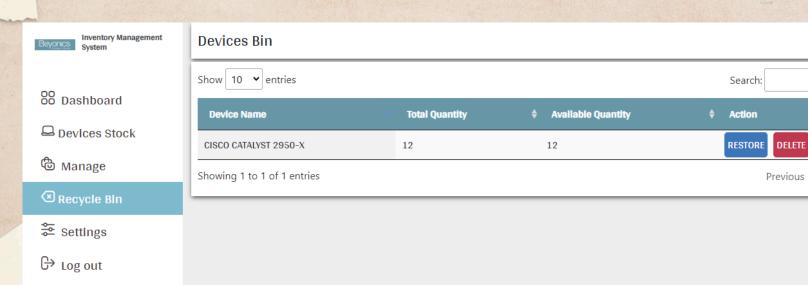


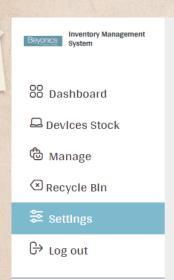
Generated CSV and PDF files from table

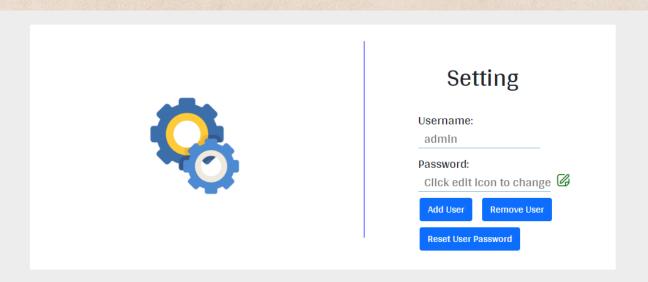
```
php > # viewProductPage.php >  html
       function exportCSVExcel() {
           var tableElement = document.getElementById("product list");
          var sourceData = "data:text/csv;charset=utf-8,";
          var i = 0:
           while (row = tableElement.rows[i]) {
               sourceData += ([
                   row.cells[0].innerText,
                  row.cells[1].innerText.
                  row.cells[2].innerText
               ]).join(",") + "\r\n";
              i++:
          window.location.href = encodeURI(sourceData);
 96
               function exportPdf(){
              var doc = new isPDF('p', 'pt');
      doc.text("Given Devices", 40, 50);
       var res = doc.autoTableHtmlToJson(document.getElementById("product list"));
      var columns = [res.columns[0], res.columns[1], res.columns[2]];
      doc.autoTable(columns, res.data, {startY: 60});
      doc.save('DevicesList.pdf');
```

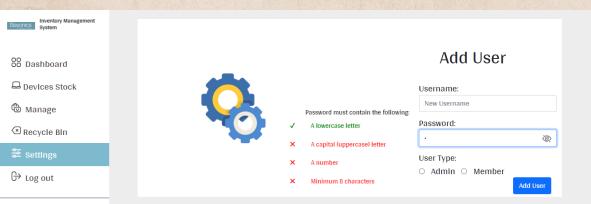
Recycle Bin Page

Next



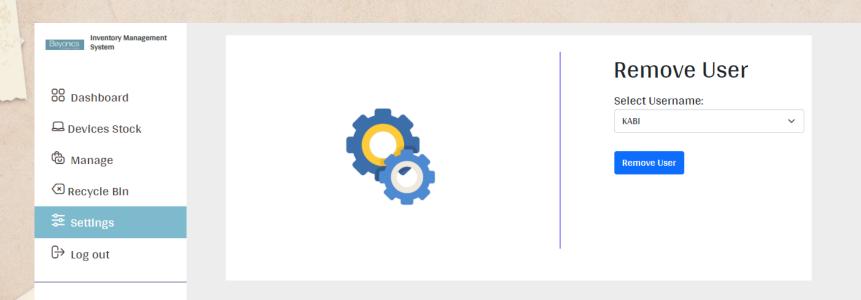




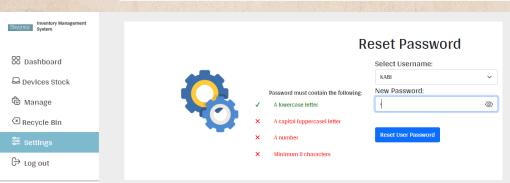


Add User Page

```
<div id="message">
 <h3 style=" font-size: 15px;">Password must contain the following:</h3>
 A <b>lowercase</b> letter
 A <b>capital (uppercase)</b> letter
 A <b>number</b>
 Minimum <b>8 characters</b>
var myInput = document.getElementById("password");
var letter = document.getElementById("letter");
var capital = document.getElementById("capital");
var number = document.getElementById("number");
var length = document.getElementById("length");
myInput.onfocus = function() {
 document.getElementById("message").style.display = "block";
// When the user clicks outside of the password field, hide the message box
myInput.onblur = function() {
 document.getElementById("message").style.display = "none";
```



Remove User Page



Reset Password Page

```
<form action="../actions/updateemppassword.php" onsubmit="myFunction()" method="post">
             Select Username:
       $Sql = "SELECT * FROM users WHERE UserName !='admin' ";
      $Result = $conn->query($Sq1);
                 <select style="text-transform: uppercase" class="form-select" name="user">
         <?php if ($Result->num rows > 0): ?>
           <?php while($row = $Result->fetch assoc()): ?>
             <option value="<?php echo $row["UserName"]?>"> <?php echo $row["UserName"]?> </option>
           <?php endwhile: ?>
         <?php endif; ?>
             New Password:
             <input name="password" id="password" type="password" class="form-control"</pre>
             placeholder="New Password"
             required pattern="(?=.*\d)(?=.*[a-z])(?=.*[A-Z]).{8,}">
style="position: absolute; top: 223px; right: 120px;" class="bi bi-eye-slash" id="togglePassword"></i>
```

Web Development for Inventory Management System Security Measures

```
$stmt = $conn->prepare("SELECT * FROM users WHERE UserName = ?");

$stmt->bind_param("s",$uname);

$stmt->execute();

$result = $stmt->get_result();

$data = $result->fetch_assoc();
```

stmt bind_param prepared statement to prevent

SQL injection

```
$sanitizeduname=htmlspecialchars($uname);
$sanitizedpword=htmlspecialchars($pword);
```

mysqli_real_escape_string function to prevent SQL injection

Htmlspecialchars to prevent cross-site scripting (XSS) attacks

Web Development for Inventory Management System Security Measures

```
<?php
$uname = $_POST['uname'];
$pword = md5($_POST['pword']);</pre>
```

MD5 hashing for password

```
while($data) {
    $unamefromdb = $data["UserName"];
    $pwordfromdb = $data["UserPassword"];
    $usertype = $data["Usertype"];

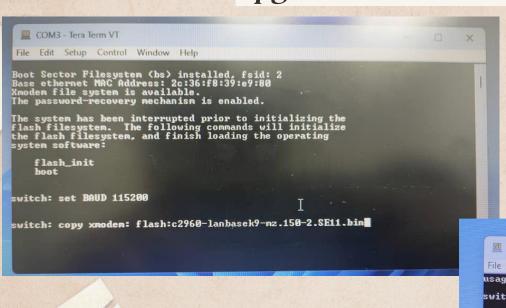
if($unamefromdb == $sanitizeduname){

    if($pwordfromdb == $sanitizedpword){
        session_start();
        session_regenerate_id(true);
        $_SESSION["user"] = $unamefromdb;
```

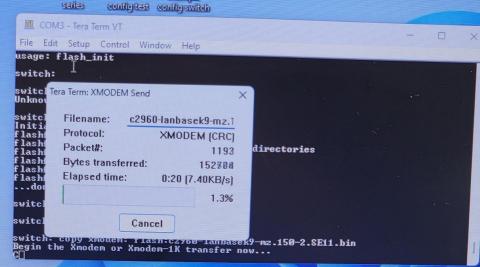
session_regenerate_id to prevent session fixation attacks

Upgrade the Cisco Switch firmware

Upgrade the Cisco Switch firmware



Use Xmodem protocol to transfer firmware

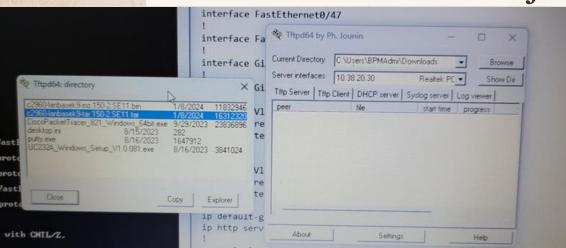


Upgrade the Cisco Switch firmware

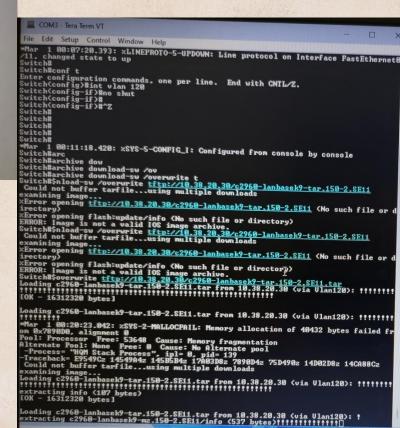
```
COM3 - Tera Term VT
 File Edit Setup Control Window Help
flashfs[0]: 0 orphaned files, 0 orphaned directories
flashfs[0]: Total bytes: 32514048
flashfs[0]: Bytes used: 23405568
flashfs[0]: Bytes available: 9108480
flashfs[0]: flashfs fsck took 12 seconds.
...done Initializing Flash.
switch: dir flash:
Directory of flash:/
                          (date)
                                                  vlan.dat
                          (date)
                                                  config.text
                          (date)
                                                  multiple-fs
                                                  c2960-lanbasek9-mz.122-50.SE5
       drwx
                          (date)
                          (date)
                                                  lost+found
                                                  private-config.text
                          (date)
                                                                                                   Booting system from latest firmware
                                                  c2960-lanbasek9-mz.150-2.SE11.bin
                          (date)
9108480 bytes available (23405568 bytes used)
switch: set BOOT flash:c2960-lanbasek9-mz.150-2.SE11.bin
switch: boot
Loading "flash:c2960-lanbasek9-mz.150-2.8E11.bin"...0000000000000000000000000000
                                                                                                            Window Help
                                                                                  Switch Ports Model
                                                                                                WS-C2960-24TI-L
                                                                                                                       SW Version
                                                                                  onfiguration register is 0xF
                                                                                                                      15.0(2)SE11
                                                                                                                                               SW Image
                                                                                  IBYP129BK01#sh run
                                                                                                                                              C296B-LANBASEK9-M
                                                                                  uilding configuration...
                                                                                  rrent configuration : 5941 bytes
                                                                               sion is e
service pad
sice timestamps debug datetime mser
vice timestamps log datetime mser
```

Cisco Switch 2960 Web Interface implementation

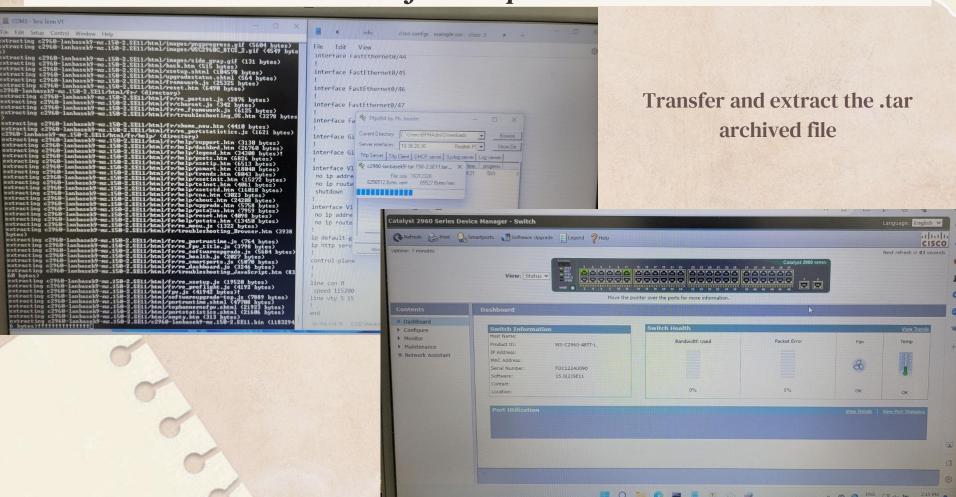
Cisco Switch 2960 Web Interface implementation



Configure TFTP in the switch and laptop



Cisco Switch 2960 Web Interface implementation and maintenance



Network Cable Crimping and Testing

Network Cable Crimping and Testing







Other tasks

- Vendor Management
- Preparation for Annual IT Inventory Audit
- Network issues in production
- Reset and Setup PCs for the users
- Printer setup and fix issues

THANK YOU!!