Network Maintenance Development

Objective

Describe the different levels of router log messages.

Scenario

Currently, there are no formal policies or procedures for recording problems experienced on your company's network. Furthermore, when network problems occur, you must try many methods to find the causes – and this troubleshooting approach takes time.

You know there must be a better way to resolve these issues. You decide to create a network maintenance plan to keep repair records and pinpoint the causes of errors on the network.

Resources

- Word processing software

Directions

Step 1: **Brainstorm different types of network maintenance records you would like to keep.**

Configuration Records: Detailed documentation of network device configurations, including routers,switches, firewalls, servers, and other critical network components. This should include network diagrams , IP addressing schemes, VLAN configurations and, and device settings.

Change Management Records: Records of all changes made to the network, including configuration changes, software updates, patches, and hardware replacements. Include information such as the date and time of the change, the person responsible, the reason for the change, and any associated risk or impacts.

Assets inventory and Lifecycle Management: maintain an up-to-date inventory of network assets, including hardware devices, software licenses, warranties, and service contacts. Track asset acquisitions, decommissions, upgrades, and retirements to manage the asset lifecycle effectively.

Step 2: **Sort the record types into main categories. Suggested categories include:**

1. **Equipment (Routers and Switches)**
    - Router Maintenance Records
    - Switch Maintenance Records
    - Firewall Maintenance Records
    - Access Point Maintenance Records
    - Server Maintenance Records
2. **Traffic**
    - Bandwidth Usage Records
    - Traffic Patterns Records
    - Network Performance Records
    - Data Transfer Records
3. **Security**
    - Intrusion Detection System (IDS) Logs
    - Firewall Logs

- Antivirus/Antimalware Logs
- Security Patch Records
- Incident Response Records

Step 3: Create an outline to guide the network maintenance planning process for the company.

1. Identify the problem

The need for maintenance can be triggered by a failure, a noisy bearing or an oil leak. Once identified, the problem must be reported to the maintenance department. This is normally done through a work request so that planning and scheduling can take place.

2. Plan the maintenance task

'Planning' involves deciding on what exactly needs to be done, determining priority, and defining the sequence of activities and skills required. Ensure that all the resources, material, labor, contract services, specialist equipment, tools and information are available. There may even be a need for outside contractors, items to be purchased or work permits to be obtained, all of which must be arranged in advance.

3. Schedule the work

'Scheduling' involves deciding when to do the work. This will depend on the priority level of the task, and the availability of both the resources and the equipment to be repaired. Many organizations schedule maintenance for a specific period during the working week or month. Weekend maintenance is never desirable because, in many cases, suppliers are not available and personnel are expensive.

4. Allocate the task to specific people

- Allocate your maintenance personnel to specific areas or pieces of equipment
- Ensure the allocated person has the skills to perform the task
- Be very clear about the type of work that will be allocated to outside contractors

5. Ensure the work is executed properly

It is usually the responsibility of the maintenance supervisor to confirm that the maintenance work meets the required quality standards, usually through selected planned job

observations. The planner (or, in some instances, a maintenance scheduler) should monitor outstanding schedules or work requests to ensure that the planned work was actually done.

6. Analyze the problem and decide how to prevent it from happening again

Analyze the root cause of major failures and take corrective action to prevent recurrence. Corrective action could include training, a change to the preventive maintenance programme or equipment redesign. Breakdown or failure of the management process is often overlooked in a major failure. In those cases, corrective action may be a systems upgrade.