

This illustration from the RAND Report R-609 depicts potential vulnerabilities within a computer network. It highlights various points where security breaches could occur, involving both human and technical factors. Here's a breakdown of the components and associated vulnerabilities:

1. Processor:

- **Files:**
 - Risks include theft, copying, and unauthorized access to data files.
- **Hardware:**
 - Failure in protection circuits can lead to software malfunctions.
- **Software:**
 - Potential issues include the failure of protection features, access control, and bounds control.

2. Communication Lines:

- **Radiation:**
 - Emissions can be intercepted, leading to data leaks.
- **Taps:**
 - Physical tapping into the communication lines allows unauthorized access to the data being transmitted.
- **Crosstalk:**
 - Signal leakage from one channel to another can result in unintentional data transfer.

3. Switching Center:

- **Hardware:**
 - Vulnerabilities include improper connections and cross-coupling, which can disrupt the network.
- **Systems Programmer:**
 - Threats include disabling protective features, providing "ins" for unauthorized access, and revealing protective measures.
- **Maintenance Man:**
 - Risks include disabling hardware devices and using stand-alone utility programs that could bypass network security.
- **Access:**

- This refers to the attachment of recorders or bugs to the network, which could allow for unauthorized data collection.

4. Remote Consoles:

- **Radiation, Taps, and Crosstalk:**
 - Similar to communication lines, these vulnerabilities can allow unauthorized interception of data.
- **Access:**
 - Attachment of recorders or bugs at remote consoles can compromise data security.
- **User:**
 - Threats include issues with identification, authentication, and subtle software modifications that can go unnoticed but compromise security.

Overall, the diagram emphasizes the numerous potential vulnerabilities that exist within a computer network, ranging from technical failures to human factors, and underscores the importance of comprehensive security measures at every level of the network.