Here is a **comprehensive sentence-by-sentence breakdown** of the document **“35. Device Impacts”**, formatted into **bullet-point study notes** and optimized for **CompTIA A+ 1102 exam prep**. Every critical detail is preserved, explained, and structured clearly.

**✅ Structured Study Notes – Device Impacts of Application Installation**

**🧠 Concept Overview**

* Installing any application will **consume device resources**:
  + **Processing power (CPU)**
  + **Memory (RAM)**
  + **Storage (disk space)**
* Applications running **in the background** can drastically reduce **system performance**.

**💡 Real-World Example: Low-Spec Deployment Scenario**

**Deployment Context:**

* A company deployed **15,000 desktop computers** across multiple countries.
* These desktops were **low-end**:
  + **4 GB RAM** (double Windows’ 2 GB requirement at the time)
  + **80 GB hard drives**
  + Few applications were installed; most work was **cloud-based or server-based**

**RAM Usage:**

* Typical memory usage on boot:
  + **2–3 GB used**
  + **1–2 GB free for user apps**

**🔥 Problem Scenario: Background-Running Security Application**

**New Application Rollout:**

* A **security application** was tested in a lab and **deployed enterprise wide**.
* It ran heavy **background scanning**:
  + File scanning
  + Log inspection
  + Threat detection

**Impact on Devices:**

* Consumed **~1 GB of RAM**.
* Since systems had only **1–2 GB free RAM**, this used up nearly all remaining memory.
* Result: **Severe slowdowns**, devices couldn’t perform basic tasks.

**🧰 The Fix: Hardware Upgrade**

* The company had to **physically upgrade all systems** from **4 GB → 8 GB RAM**.
* Only then could users run both the **security app** and essential tools (e.g., Microsoft Office).

**⚠️ Key Takeaway: Every Application Impacts Devices Differently**

| **Type of Impact** | **Description** |
| --- | --- |
| **Processor-intensive apps** | Slow down system responsiveness (e.g., video editing, antivirus scanning) |
| **Memory-intensive apps** | Consume large RAM amounts, cause system freezing or lag |
| **Storage-heavy apps** | Eat up disk space, possibly fill SSDs or slow down hard drives |

**🧪 Testing Is Crucial**

* Always **test new applications on systems that match the production environment**.
* Testing only on “clean” baseline systems can be **misleading**.

Example:

* Testing on a baseline device with Office only = worked fine
* Real user device also had **Adobe Creative Cloud** = not enough RAM

**📌 Best Practices**

| **Step** | **Description** |
| --- | --- |
| **1. Pre-deployment testing** | Use a sample system that closely mimics real-world setups |
| **2. Resource evaluation** | Consider RAM, CPU, and disk usage requirements of new apps |
| **3. Compatibility checks** | Assess whether new apps will conflict with or overload existing tools |
| **4. Upgrade planning** | Be ready to upgrade hardware if needed (especially RAM) |

**📎 Real-Life Conflict Example**

* A photo editor used:
  + **Adobe Creative Cloud (e.g., Photoshop)**
  + The new **security software**
* Result: Device became **unusable** due to insufficient memory to run both simultaneously.

**🎯 CompTIA A+ 1102 Relevance**

* Falls under:
  + **Objective 1.6**: Application installation and configuration
  + **Objective 4.3**: Troubleshooting OS and application performance

Expect scenario questions like:

*“After deploying a new app, users report slow performance. What should the technician check first?”*

✅ **Check device RAM and CPU usage**