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| Document ID  **ITTS104** | Title  **IT TROUBLESHOOTING** | Print Date  **mm/dd/yyyy** |
| Revision  **0.0** | Prepared By  **Preparer’s Name / Title** | Date Prepared  **mm/dd/yyyy** |
| Effective Date  **mm/dd/yyyy** | Reviewed By  **Reviewer’s Name / Title** | Date Reviewed  **mm/dd/yyyy** |
|  | Approved By  **Final Approver’s Name / Title** | Date Approved  **mm/dd/yyyy** |

**Policy:** To minimize Information Technology system disruptions, enhancing productivity and promoting user satisfaction.

**Purpose:** To prescribe a procedure for troubleshooting Information Technology-related problems; to enable effectiveness, consistency, and continual improvement of the troubleshooting process.

**Scope:** This procedure applies to all Company Information Technology assets.

**Responsibilities:**

Information Technology Managers are responsible for evaluating the Information Technology Department’s troubleshooting methods, approving the Information Technology Troubleshooting Plan, and periodically reviewing the Plan.

The Tech Support Manager is responsible for developing, communicating, and implementing the Plan.

The Tech Support Manager is responsible for acting on user requests for troubleshooting, knowing and consistently applying the Information Technology Troubleshooting Plan, and recording troubleshooting activities for the purpose of monitoring and improving the Plan.

Users are responsible for reporting problems to the Help Desk in a timely manner, reporting accurately and with as much detail as possible.

**Definitions:** Cold boot – Start a computer (CPU) from its powered-down (off) state; also referred to as a “hard boot”.

Reboot – Restart a computer, either by warm booting or cold booting.

Troubleshoot - Isolate the source of a problem and fix it. Troubleshooting is a process of elimination, whereby possible sources of the problem are investigated and eliminated, beginning with the most obvious or easiest problem to fix. In computer systems, the term *troubleshoot* is often used when the problem is thought to be hardware-related; if the problem is software-related, the term *debug* is used.

Warm boot – Restart a computer by way of its operating system (i.e., “Control-Alt-Delete”). Warm booting returns a computer to its initial state without shutting it off.

**Procedure:**

1. **IT TROUBLESHOOTING – PLANNING**
   1. Information Technology Managers (or its designee) shall review and evaluate the Information Technology Department’s current troubleshooting methods and capabilities, comparing them with industry standards, best practices, and technology trends and performing a gap analysis. Information Technology Managers (or its designee) shall also review ITAD110-2 USER SATISFACTION SURVEY for indicators of user dissatisfaction with current troubleshooting methods and/or results.
   2. The Tech Support Manager shall develop an Information Technology Troubleshooting Plan (using ITTS104-1 IT TROUBLESHOOTING PLAN as a guide) and submit the Plan to Information Technology Managers for review, comments, and possible revisions.
   3. If Information Technology Managers requests revisions to the Plan, the Tech Support Manager shall revise the Plan and submit the revised Plan to Information Technology Managers for review and final approval.
   4. Upon Information Technology Managers’ approval, the Tech Support Manager shall ensure communication of the Plan to Tech Support personnel (and applicable parts of the Plan to all users) and shall oversee implementation of the Plan.
2. **IT TROUBLESHOOTING PLAN**
   1. If a computer equipment problem is suspected, the user shall first attempt to correct or verify the problem, following ITTS104-2 USER TROUBLESHOOTING GUIDE, before contacting the Help Desk. The user may be able to conserve limited Help Desk resources. Furthermore, when it becomes necessary to contact the Help Desk, the user may greatly speed up problem resolution by providing detailed information.
   2. If the user is unable to solve the problem by the User Troubleshooting Guide, he/she shall contact the Help Desk for assistance. The Tech Support Manager shall investigate and attempt to resolve the problem in accordance with ITTS104-1 IT TROUBLESHOOTING PLAN.
   3. The Tech Support Manager shall record all troubleshooting occurrences in a Troubleshooting Log (ITSD108-3 IT SECURITY INCIDENT LOG may be used as a guide. Also, the Company may wish to combine the troubleshooting and security incident logs into one Help Desk log). The troubleshooting occurrence should also be entered into a “troubleshooting knowledge base” for future reference by the Tech Support (Help Desk) staff.
3. **IT TROUBLESHOOTING PLAN REVIEW**
   1. The Tech Support Manager shall follow up on troubleshooting calls to determine users’ satisfaction, in accordance with ITAD110 IT DEPARTMENT SATISFACTION. The Tech Support Manager should periodically review user satisfaction measures to help verify the Plan’s effectiveness.
   2. The Tech Support Manager shall periodically (monthly, at a minimum) review the Troubleshooting Log and other records generated in the course of troubleshooting problems and report its findings and observations to Information Technology Managers for review.
   3. Information Technology Managers should periodically review the Plan with Tech Support personnel, to determine if the Plan is helping with problem resolution.
   4. Information Technology Managers may direct the Tech Support Manager to revise the Plan, if it is ever determined that the Plan is not meeting requirements for response time, quality of response, or degree of improvement over time.
4. **IT TROUBLESHOOTING PLAN UPDATE**
   1. The Tech Support Manager shall revise the Plan, as directed, test the revision(s) in a lab setting, and submit the revised Plan to Information Technology Managers for review and approval.
   2. The Tech Support Manager shall communicate the revised Plan to Tech Support personnel and ensure its implementation.
   3. Within two weeks of the Tech Support Manager implementing the revised Plan, Information Technology Managers (or its designee) shall review activity during the previous two weeks to ensure that the Plan is properly implemented and is yielding the desired results.

**Forms:**

* ITTS104-1 IT TROUBLESHOOTING PLAN
* ITTS104-2 USE TROUBLESHOOTING GUIDE

**References:**

* None.

**Additional Resources:**

* None.

**Revision History:**

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| **Revision** | **Date** | **Description of Changes** | **Requested By** |
| 0 | mm/dd/yyyy | Initial Release |  |
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**ITTS104-1 IT TROUBLESHOOTING PLAN**

1. Problem discovery.
   1. The user implements the User Troubleshooting Guide prior to contacting the Help Desk.
   2. If the User Troubleshooting Guide has not provided a solution, the user escalates the problem by contacting the Help Desk (Tech Support).
2. The Help Desk enters the problem in the Troubleshooting Log.
3. The problem is assigned to a Tech Support person, who begins by isolating the problem.
   1. Check the Troubleshooting Knowledge Base for prior occurrence(s) of the problem.
   2. Evaluate the configuration of the problem unit.
   3. Perform other tests, as needed, to determine the root cause of the problem.
4. Identify possible solutions.
   1. Solution One
   2. Solution Two
5. Test possible solutions.
   1. Test Case One
   2. Test Case Two
6. Evaluate test results.
   1. Test Case One
   2. Test Case Two
7. Correct the problem.
8. Close the Troubleshooting Log.
9. Add the problem and solution to the Troubleshooting Knowledge Base.

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**ITTS104-2 USER TROUBLESHOOTING GUIDE**

Before you contact the Help Desk (Tech Support):

* Make sure all components – monitor, CPU, and peripherals – are switched on and receiving power (see “Power Checklist”). If you call the Help Desk for assistance, make sure to tell the Tech Support analyst the results of your power check.
* See if all cables attached to the affected equipment are firmly connected. If you find any cable connections that seem loose, push them snugly into place (see “Equipment Connection Checklist”).
* Save and close all open files, close all applications, and do a “warm reboot” of the computer. If a warm reboot does not resolve the problem, try a “cold reboot”. If that does not resolve the problem, contact the Help Desk.
* If a keyboard, mouse, or monitor is not working properly, swap it out for one that is known to be functioning correctly on another computer.  If the swapped equipment does not resolve the problem, contact the Help Desk.
* If you are having trouble printing, see if other computers using the same printer are experiencing the same printing problem. Check the Print Manager or a similar utility for the status of your print job. If your computer is networked to more than one printer, see if another printer will handle your job. Note the results of each type of test and contact the Help Desk with the details.
* Check to see if your computer is the only one in your subnetwork being affected by the problem. Knowing if the problem is an isolated case or affects other computers in the subnetwork will help Tech Support.
* Find out if any changes have been made to your computer since the last time it functioned properly (e.g., a software utility or a patch installed while you were out of the office). If hardware or software on your computer was altered or was added to or removed from your computer before the problem appeared, the Help Desk should have a record of this.

See: “Power Checklist” and “Equipment Connection Checklist” on the following pages.**POWER CHECKLIST**

* Make sure all power cords are firmly in place on both ends.
* Check the power cord for damage.
* Make sure that each piece of equipment (including the power conditioning or UPS device) has its “power indicator” light on.
* Test the equipment and electrical outlet:

1. Plug the suspect unit (monitor, CPU, UPS, etc.) into another electrical outlet that you have confirmed is working.  If the unit works, the original outlet should be serviced.  If the unit doesn’t work after being plugged into the new outlet, report the problem to the Help Desk because the unit may need servicing.
2. Plug another device, like a lamp, into the original electrical outlet.  If the lamp works, the electrical outlet is not the problem.  If the lamp does not work, the electrical outlet may be in need of repair and appropriate action should be taken.
3. If the power cord to the CPU, monitor, etc., is removable, replace it with another removable power cord.  If the unit works with a new power cord, your original power cord is damaged and should be replaced.

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**EQUIPMENT CONNECTION CHECKLIST**

When you are experiencing problems with equipment, you should first check whether or not the connecting cables are securely plugged into the appropriate port.  Connection confirmation procedures for specific devices are discussed below.

1. Keyboard and Mouse

1. It is easy for keyboard and mouse cable plugs to work their way out of ports or sockets.  When you check them, make sure they are securely plugged in.  If you find that a mouse or keyboard plug is loose, plug it firmly into the port, reboot your computer and test the keyboard or mouse.
2. If you continue to have problems, try replacing the current mouse or keyboard with one that you know works, and then reboot your computer.  If the swapped-out device works then the original device needs to be permanently replaced and/or repaired.  Report this to the Help Desk to initiate the repair process.
3. If you have problems with the swapped-out mouse or keyboard, then call the Help Desk to report the incident because there may be a problem with your computer.

2. Monitor

1. If you have monitor problems and the monitor is not integrated into the computer (such as in Apple iMacs), make sure the serial cable from the monitor to the computer is firmly connected to the computer. After you check the serial cable, make sure the monitor is securely plugged in.  After you have reseated the serial cable, reboot your computer and monitor.
2. If you continue to have problems, try replacing the current monitor with one that you know works and reboot your computer.

* If the swapped-out monitor works, the original monitor may need repair or replacement.  Report this problem to the Help Desk.
* If you have problems with the swapped-out monitor as well, report this also to the Help Desk, as there may be a problem with your computer.

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