1. Troubleshooting Methodology

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Troubleshooting Methodology
1. Identify the problem

- To identify the problem, you should gather more information through:
  - Phone calls
    - Ask the client probing questions to understand the problem.
  - Ticketing system
    - Ask the client to attach a screenshot/log file and describe the problem.
  - Other sources…

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Troubleshooting Methodology
1. Identify the problem

- The root cause of an issue is not always apparent, example:
  - A failed login attempt might indicate that it's a username or password problem.
  - Instead, the real issue is a lack of network connectivity/system issue that prevents authentication from being checked.
- As a troubleshooter, ensure that you've identified the root cause of the error

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Troubleshooting Methodology
1. Identify the problem

- Steps for identifying the root cause may include:
    1. Gather information from log files, screenshots (of the issue) and error messages.
    2. Ask questions to the client for steps to reproduce the problem.
    3. Identify symptoms of the problem (e.g. unable to access a website).
    4. Determine recent changes.
    5. Replicate the problem.
    6. Narrow the scope of the problem.

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Troubleshooting Methodology
2. Establish a theory of probable cause

- Come up with an educated guess as to what the root cause is, based on the steps you took in Step 1 (identifying the problem).
- Investigation is required on your part to provide a basis for your theory:
  - Product/Service documentation
  - FlairsTech documentation
  - Google search

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Troubleshooting Methodology
2. Establish a theory of probable cause

- Steps for establishing a theory:
    1. What are the symptoms?
        - Software freezes
        - Service loading time is slow
    2. When does the problem occur?
        - Time?
        - Trying to login / Edit a field / Launch a software?

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Troubleshooting Methodology
2. Establish a theory of probable cause

3. Where does the problem occur?
    - On which screen of the service/product?
    - On which part of the process?
4. What are the conditions when the problem occurs?
    - Current screen resolution
    - Browser used
    - Plugins installed/used
5. Is the problem reproducible?

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Troubleshooting Methodology
2. Establish a theory of probable cause

- Question the obvious: start simple and work toward the complex.
- Eliminate. Perform the previous steps to expose which components **are not** part of the problem.
- **Take notes for documentation**.

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Troubleshooting Methodology
3. Test the theory to determine the cause

- Troubleshooting is an iterative, trial-and-error process.
- Eliminate various options and look for the most straightforward cause first.
- Changes shouldn’t be made until you are sure you have a solution that you’re ready to implement

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Troubleshooting Methodology
3. Test the theory to determine the cause

- If your theory proves incorrect, go back to step 1 (identifying the problem) by checking again with users and digging more deeply into log files or using Google.
- Once you’re confident you’ve found the fundamental issue, prepare to solve the problem.

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Troubleshooting Methodology
4. Establish a plan of action and implement the solution

- After testing your theory, plan how to address the issue.
- Plan ahead before implementing the solution:
  - Some fixes require a reboot.
  - Patches or drivers may need to be downloaded.
  - Test modifications in a staging environment before implementing in production.
  - Document the series of steps, commands and scripts used.
  - Back up data that might be at risk.
  - Get approval from client/person in charge – if required – before making changes.

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Troubleshooting Methodology
4. Establish a plan of action and implement the solution

- Your plan of action may be:
  - Run a script.
  - Update the system/software/service.
  - Edit configuration files.
  - Change firewall settings.
  - Change service-related settings
  - Other…

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Troubleshooting Methodology
4. Establish a plan of action and implement the solution

- You must be able to reverse the changed settings to get back to where you began in case your attempt to fix the issue doesn't address the issue.

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Troubleshooting Methodology
5. Implement the solution and verify system functionality

- Once the issue has been identified, the solution should be implemented and tested to ensure the problem is fixed.
- Successful resolution/troubleshooting is achieved when the problem is no longer reproducible and functionality is restored/fixed.

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Troubleshooting Methodology
5. Implement the solution and verify system functionality

- Have the client verify the implemented fix, to confirm the issue has been addressed/resolved.

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Troubleshooting Methodology
5. Implement the solution and verify system functionality

- Example on **failing to verify** functionality:
  - A support employee was called to investigate a login issue.
  - He identified the problem (the user is unable to login due to being suspended after many incorrect tries).
  - He established a plan of action (reset suspension status)
  - He implemented the solution of reset and closed the ticket without verifying that functionality is restored and identify the actual root cause of the problem.
  - **The password was actually input incorrectly** and the password had to actually be reset.

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Troubleshooting Methodology
6. Document your findings

- Documentation is very important, you should document the following:
  - Troubleshooting steps
  - Changes made
  - Updates installed
  - Scenarios tested
  - Research performed:
    - Product Help
    - Knowledge Base (internal or product)
    - Old tickets
    - Google

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Troubleshooting Methodology
6. Document your findings

- It’s useful in the future when a similar problem arises, or when the same problem turns out not to have been fixed at all.
- It’s useful for communicating with other support agents what you’ve tried so far.
- It’s useful for reversing your changes in case your implemented actions had unintended consequences.

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Troubleshooting Methodology
7. Keep it simple

- Each environment is unique and as you gain experience, you'll be able to predict the likely cause of an issue.
- Start simple, work toward the more complex.

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Troubleshooting Methodology
7. Keep it simple

- Following the troubleshooting methodology makes you consistent and efficient at finding and resolving service and/or product issues.

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Troubleshooting Methodology
8. Follow up

- Before fixing the issue, explain to the client in simple terms the steps that will be taken and why.
- Follow up with the client next time you interact and ask how their service is working.
- It shows that you actually care about them and their experience.
- Update your documentation accordingly with follow up results.

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