# Creating Bug Reports (COE-KG-XXX)

Bugs are deviations or defects noted in the deployment or end-state of a system. They can be anything from a minor inconvenience to potentially catastrophic failure points. This article will guide you on how to go about handling bugs and the creation of bug reports in user stories.

## ****Steps to Reproduce****

Indicates all the details we need in order to see the bug. For instance, by including **screenshots and writing down** the steps to recreate the issue we are able to allocate the right resources and assign the bug to the correct team.

The Steps to Reproduce or Recreate should be a **numbered list** of the steps that you took to notice the problem. The person who opens the bug report will try these steps and fix the problem if they can see it. However, if they cannot, there is nothing they can do. This first step is called "replicating a bug." The actions you describe are vital to ensuring that you can replicate bugs before fixing them.

* An example of **Steps to Reproduce** might look like this:

1. Uncomment the agent extension code at the bottom of the linuxVirtualMachine module
2. Deploy the VDC / Landing Zone structure
3. Deploy the linuxVirtualMachine module, or the 2tier-linux-app into a landing zone

## ****Note the Expected vs. Actual Behavior****

As the title explains, within a bug report there should be a section where you describe what the expected behavior of a particular section of code/system **should be**. And in contrast, you should write a section **explaining** the actual outcome/result of executing the section of code.

* An example of **Expected vs. Actual Behavior** may be :

***Expected Behavior*:**

* Module Completes successfully
* Log data from the VMs w/in 2tier-linux-app is supplied to LAW via OMS/ AMA agent

***Actual Behavior:***

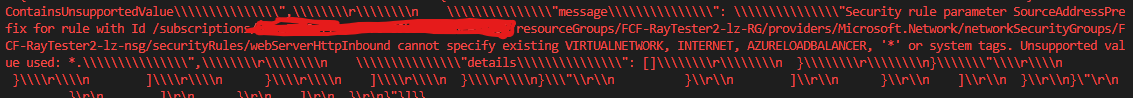
* Module reports failure during installation of VM extension
* You should experience the deployment hang-up on the 2 extension installs, never completing
* An error message indicating failure to list keys for LAW will be present

## ****Include Screenshots / Error Messages in a Bug Report****

Screenshots/error message capturing is a critical piece of a bug report because it shows:

* Proof you observed the problem
* A general location/starting point to investigate the issue

### ****Example :****



### ****Prioritize / Estimate Bugs****

We **cannot always determine** the period of repairing something that is broken in an unknown way. Therefore, we estimate and prioritize the defect list into **three** main categories:

**The 3 Priorities:**

* **High** - bugs that are affecting the core functionalities of the product
* **Medium** - bugs that have a workaround, but degrade the core functionalities of the product
* **Low** - bugs that do not affect critical / core functions of the product, usually for cosmetic purpose

### ****Scenarios:****

Below are **two** example scenarios for handling the defects, by either assigning a time window or refinement and estimation:

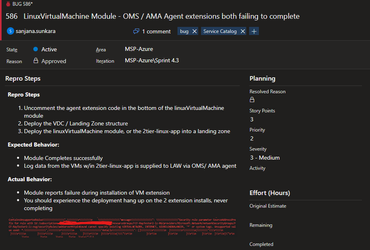
* **Scenario 1: Assign the timebox to the bugs.**

The team assigns a fixed number of hours dedicated to working on the bugs, servicing them based on the top priority within the list of bugs. In this scenario, the team can handle one bug or five or an unlimited amount of bugs. There is **no prediction** on how many bugs the team can do and no commitment to the delivery time. But, at the same time, there is no time lost in investigating the bugs.

* **Scenario 2: Refine the bugs and estimate them in user stories.**

For clarification, the bugs are the misfunctioning of the product. Functionalities that aren’t present in the product, must be handled with user stories, not with bugs. The nature of the flaws in software is **very uncertain**: they can take a few minutes, as they can take an unestimated amount of time. It might take more effort to find the root cause of a bug than actually fix it. If you want to estimate a bug, you first need to i**nvestigate the issue, look into the code, debug, and isolate the problem**. If the team spends this effort during the refinement processes and the entire team is involved, it might be a waste of team effort.

### Example of Good Bug Report:



### Examples of Bad Bug Report:

