



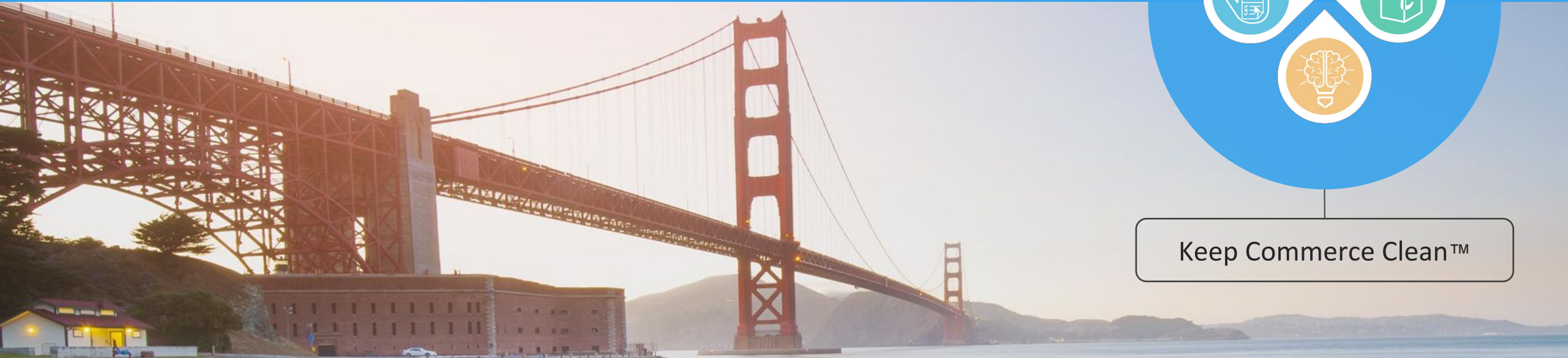
Planning for Failure

Automating a Failure Model

2017-11-28



Keep Commerce Clean™



Failure Model

What is it?

Defines the product/component behaviour in the presence of a given fault.

What are the Goals?

- Increase the product resilience to faults by enforcing fault tolerance behavior
- Build an easy to follow troubleshooting guide for the most common problems

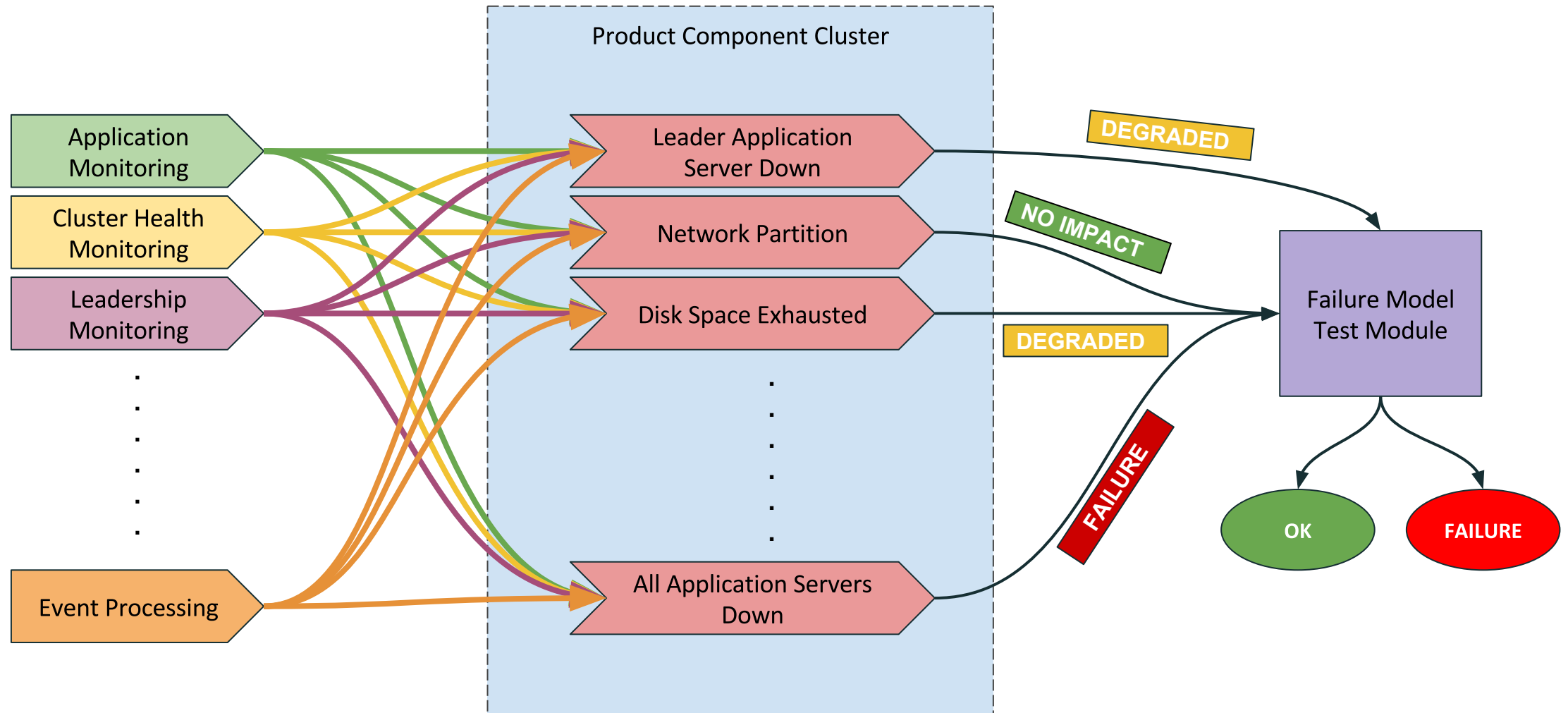
Failure Model

What is it and how it was defined

For the curious: <https://docs.feedzai.com/x/ZK7TAg>

Failure Model

How does it work?

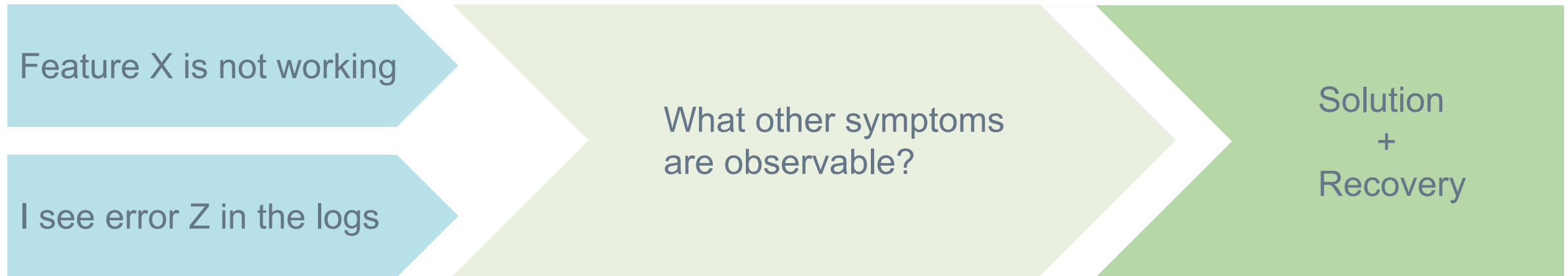


Troubleshooting Guide

A first-line tool for problem solving

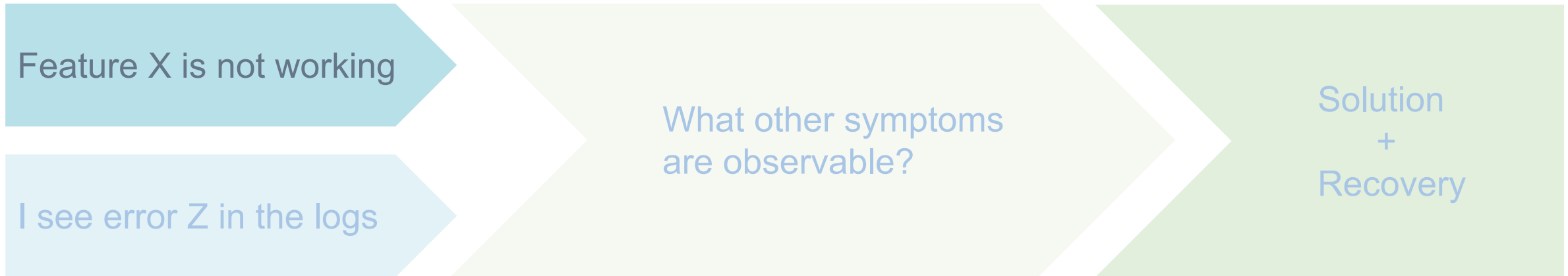
Troubleshooting Guide

How do we realise things are failing?



Troubleshooting Guide

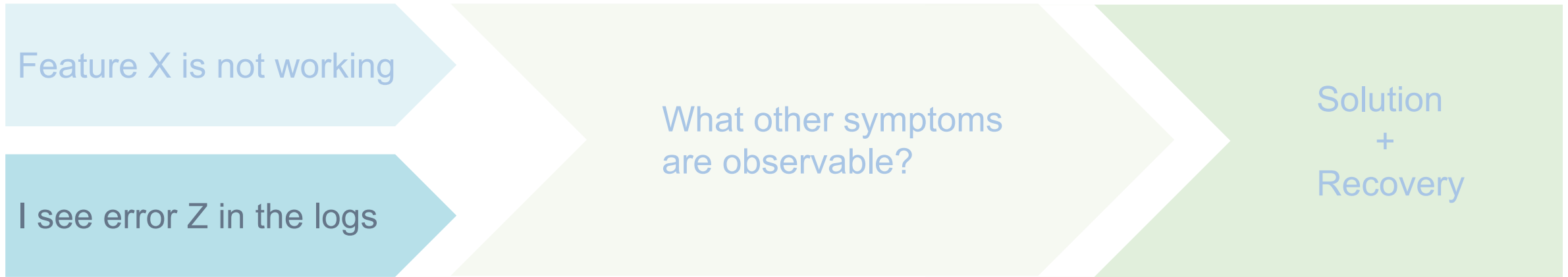
How do we realise things are failing?



I know what feature is causing the problem ...

Troubleshooting Guide

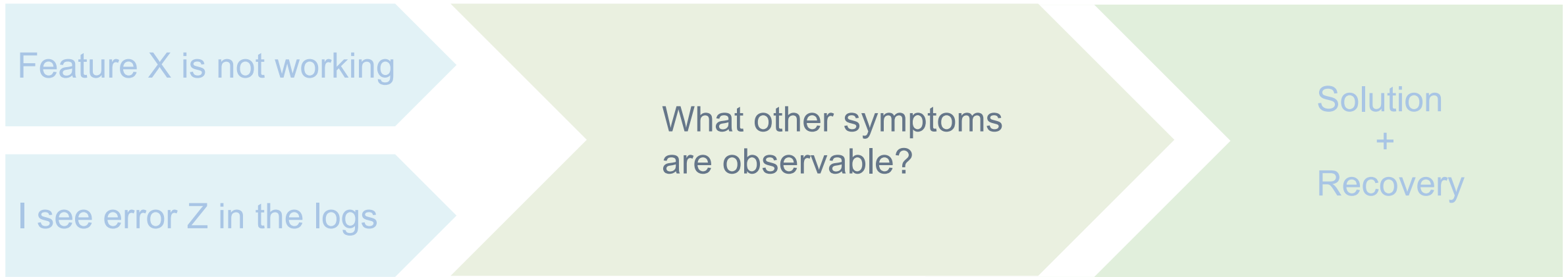
How do we realise things are failing?



I don't know what feature is having the problem, but
I'm seeing symptoms of some failure ...

Troubleshooting Guide

How do we realise things are failing?

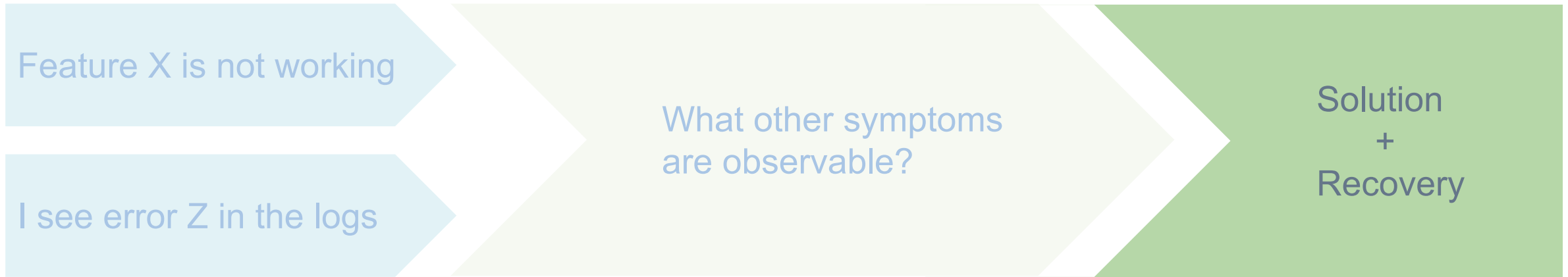


Identify other possible symptoms

For each identified symptom the user proceeds along a decision tree

Troubleshooting Guide

How do we realise things are failing?



The user is taken to a page describing the probable failure cause along with the recovery steps.

Outcomes

The most tangible lessons learned

Failure Model Outcomes

- **Product's quality in Failure scenarios is backed by a systematic automated suite**
- **The troubleshooting guide is backed with automated reproducible scenarios**
- **Several bugs on the fault tolerance mechanisms were identified and fixed**
 - Highly distributed tests stimulate “hard to test” component dynamics and parts of the code
- **Better insight of how components handle faults**
 - Some do not tolerate network failures, while others handle well almost all faults
- **It is easy to extend the failure model**
 - Possible to modularly add a new feature, a new component, new behavior or a new fault.