- ## Phase 4 - Operational Excellence

Operational Excellence Design Principles

There are five design principles for operational excellence in the cloud:

- **Perform operations as code**: In the cloud, you can apply the same engineering discipline you use for application code to your entire environment. You can define your total workload (applications, infrastructure) as code and update it with code. You can implement your operations procedures as code and automate their execution by triggering them in response to events. By performing operations as code, you limit human error and enable consistent responses to events.

- **Make frequent, small, reversible changes**: Design workloads to allow components to be updated regularly. Make changes in small increments that can be reversed if they fail (without affecting customers).

- **Refine operations procedures frequently**: As you use operations procedures, look for opportunities to improve them. As you evolve your workload, evolve your procedures appropriately. Set up regular game days to review and validate that all procedures are effective and that teams are familiar with them.

- **Anticipate failure**: Perform "premortem" exercises to identify potential sources of failure so that they can be removed or mitigated. Test your failure scenarios and validate your understanding of their impact. Test your response procedures to ensure that they are effective and that teams are familiar with their execution. Set up regular game days to test workloads and team responses to simulated events.

- **Learn from all operational failures**: Drive improvement through lessons learned from all operational events and failures. Share what is learned across teams and through the entire organization.

Operational Excellence Evaluation Questions

1. How do you determine what your priorities are?
2. How do you structure your organization to support your business outcomes?
3. How does your organizational culture support your business outcomes?
4. How do you design your workload so you can understand its state?
5. How do you reduce defects, ease remediation, and improve flow into production?
6. How do you mitigate deployment risks?
7. How do you know that you are ready to support a workload?
8. How do you understand the health of your workload?
9. How do you understand the health of your operations?

10. How do you manage workload and Operations Events?
11. How do you evolve operations?

Apply these to your design. Update the design. Commit the design to the repository.