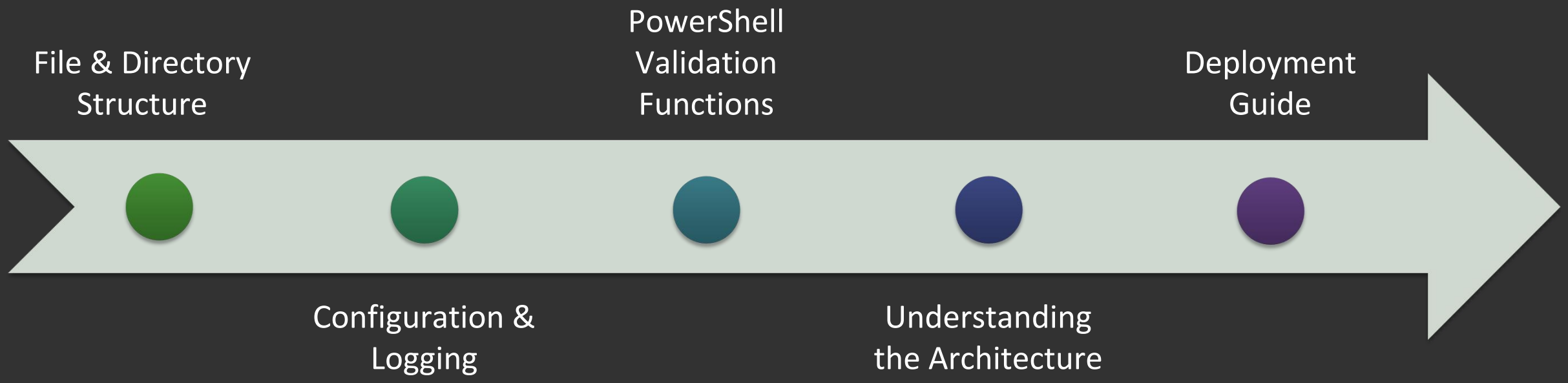
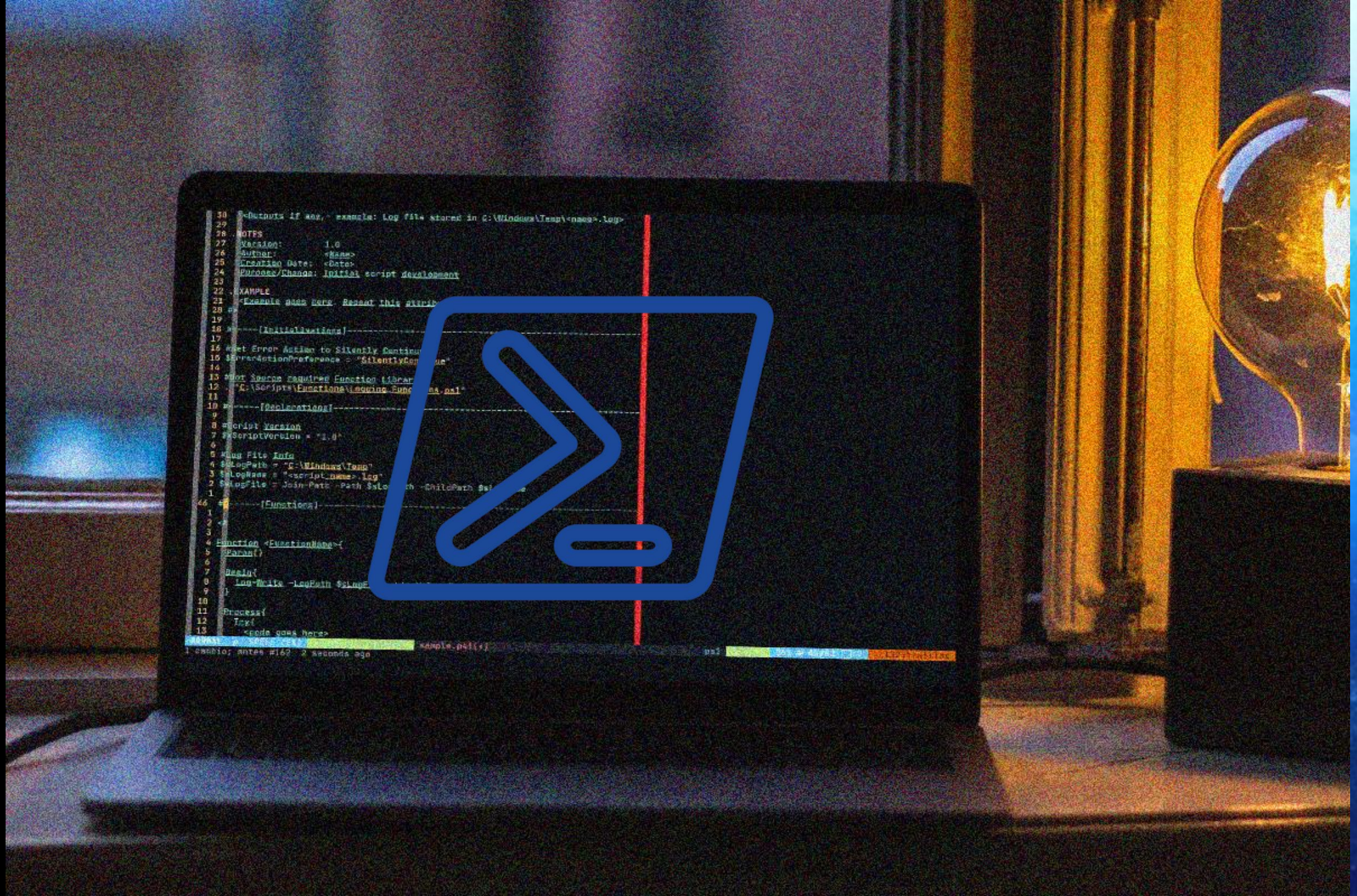
Automating System & Application Validation Process



Understanding PowerShell's Logging Module

Automating System & Application Validation Process



ROI Calculator

ROI Calculator for our Automation				
Initial Values			**Derived Values**	
Number of customers	**50**			
Environments per customer (dev, test, prod etc)	**10**		Total Server Count	**1500**
servers in each environment (web,app,database etc.)	**3**			
How frequently you might need to validate (approximate time per month)	**3**			
Time you need to validate each server(in minutes)	**5**		Total Time Spent on each server validation(per month)	**15**
Total Manual Effort **minutes per month**				22500
Total Manual Effort **hours per year**				4500
Windows System Admin Average Salary per hour(in USD)				25
Cost Saved (in USD per year)				112500

Resume

I saved 100k + USD for my employer using my PowerShell automations

Code Enhancement

- *Check if the module is installed*
- *If module is installed, Continue*
- *If module is **not** installed, Install it first and then Continue*

Code Enhancement

Completely remove the dependency on logging module from our Validation Code.

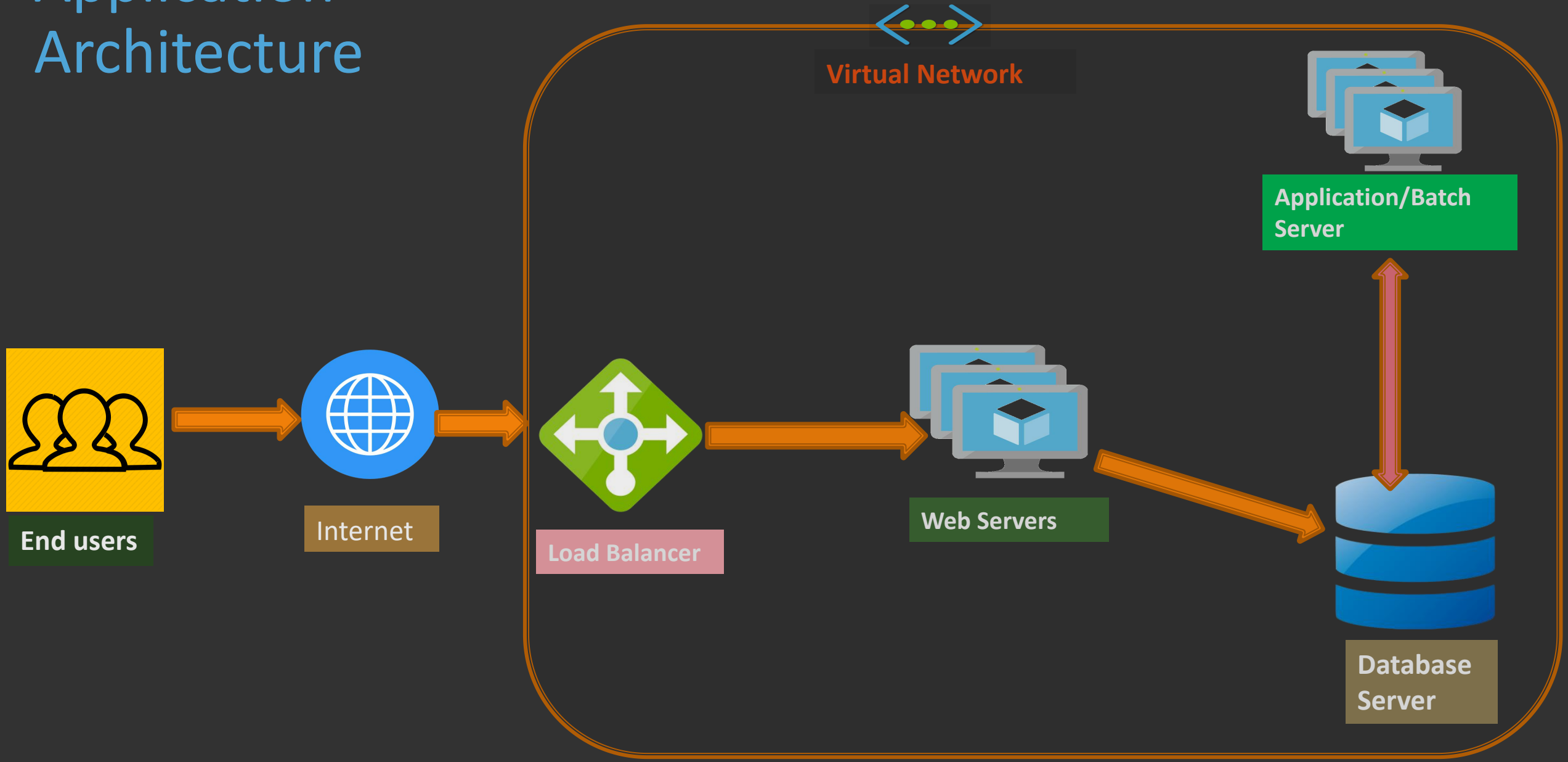
Review

Please provide your valuable short review/feedback about this automation in the next 15minutes.

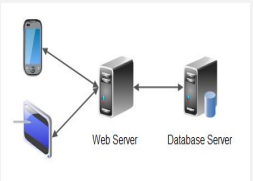
Implement the automation for your needs and Don’t forget to send me the screenshots of your Report.

Thank You

Application Architecture



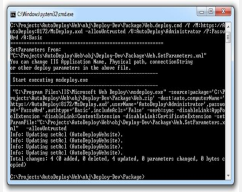
Lab Setup



Application Architecture

Deploy Resources in Cloud

Deploy Script on the VMs



Script Execution

Logging

- XML Based Configuration File
- Logging
- Cloud Orchestration
- HTML Report

Why Need Validation Automation

To Validate Application Environments during:

- Monthly Patching
- Application Upgrades
- Database Upgrade
- Urgent Patches
- Resolving critical cases

Automating System & Application Validation Process

Libraries

Server Validation Script

Reports

Server1 Report

Server2 Report

Server3 Report

Report Consolidation Script

Consolidated Validation Report

Configuration File

Logiles

PowerShell Modules

- XML Based Configuration File
- Logging
- Cloud Orchestration
- HTML Report

Importance of Validation Automation

Status

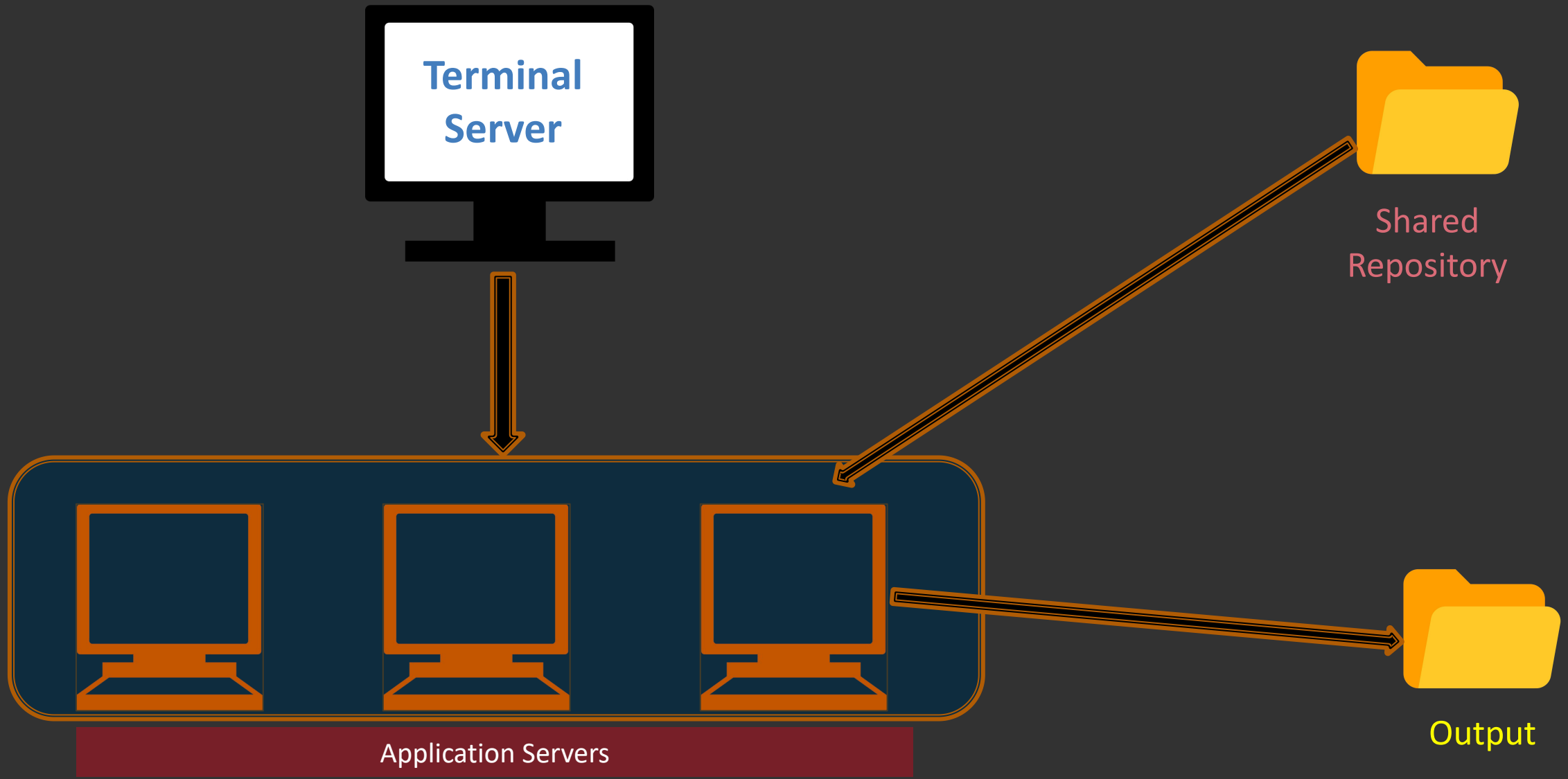
- INFORMATION
- SUCCESS
- FAILED
- EXCEPTION

Configuration File

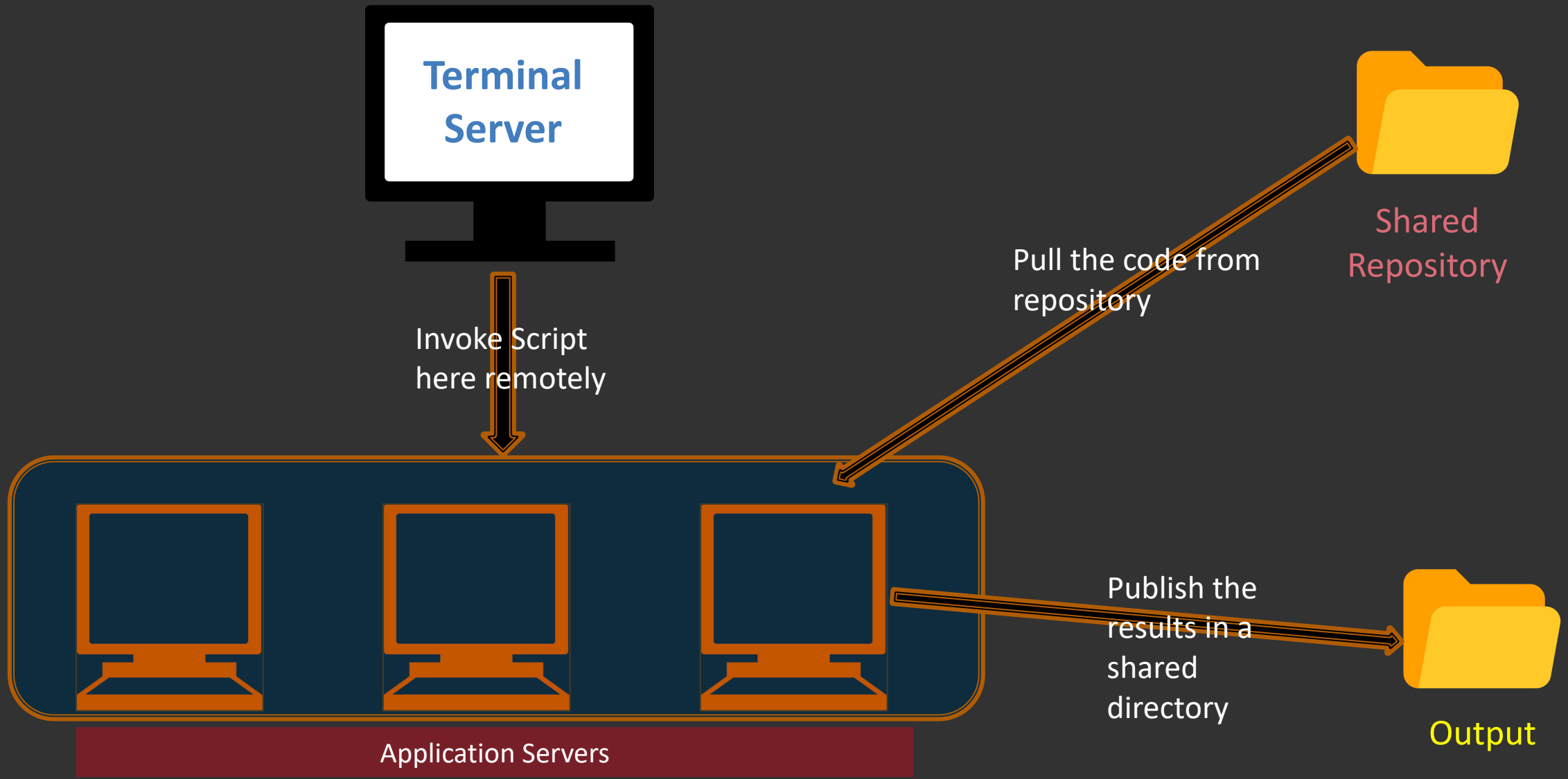
Files used to configure the parameters and initial settings for some computer programs

```
▼<Validation>
  ▶<GlobalVariables>
    ...
   </GlobalVariables>
  ▼<TIER>
    ▼<TIER name="web">
       <TIER_TASKS>SysInfo,URL,DiskHealth,
     </TIER>
   </TIER>
  ▼<TIER>
    ▼<TIER name="app">
       <TIER_TASKS>SysInfo,URL,DiskHealth,
     </TIER>
   </TIER>
  ▼<TIER>
    ▼<TIER name="sql">
       <TIER_TASKS>SysInfo,URL,DiskHealth,
     </TIER>
   </TIER>
 </Validation>
```

Remote Script Execution Architecture



Remote Script Execution Architecture



Planned Service Restart

Requirement

Due to excessive workload, Application Performance is impacted. To keep the application healthy, We are asked to:

Schedule a daily restart of IIS, Apache Tomcat and MyBatch Services at 4 AM.

A logfile containing the service status before & After restart is expected.

Automation: Planned Service Restart

Version1:

Centralized Solution to deal with restarting fixed services on multiple servers

Version2:

Centralized Solution to deal with restarting different services on different servers