

DEVOPS ESSENTIALS #1

CLOUD COMPUTING

- Renting Resources, Like Storage Space Or CPU Cycles, On Another Company's Computers.
- You Only Pay For What You Use.
- The Company Providing These Services Is Referred To As A Cloud Provider.
- Some Example Providers Are Microsoft, Amazon, And Google.

CLOUD PROVIDER

- Is Responsible For The Physical Hardware Required To Execute Your Work, And For Keeping It Up-To-Date.

COMPUTING SERVICES

- Offered Tend To Vary By Cloud Provider.

COMPUTE POWER

- Such As Linux Servers Or Web Applications

STORAGE

- Such As Files And Databases

NETWORKING

- Such As Secure Connections Between The Cloud Provider And The Company

ANALYTICS

- Such As Visualizing Telemetry And Performance Data

BENEFITS OF CLOUD COMPUTING

1. It's Cost-Effective
2. It's Scalable
3. It's Elastic
4. It's Current
5. It's Reliable
6. It's Global
7. It's Secure

DEVOPS

- Is The Union Of People, Processes And Products To Enable Continuous Delivery Of Value To End Users
- Encompasses Culture, Measurement, Automation And Collaboration
- Is People Following A Process Enabled By Products To Deliver Value To End Users

THE AGILE MANIFESTO VALUES:

- | | | |
|---------------------------------|------|-----------------------------|
| 1. Individuals And Interactions | Over | Processes And Tools |
| 2. Working Software | Over | Comprehensive Documentation |
| 3. Customer Collaboration | Over | Contract Negotiation |
| 4. Responding To Change | Over | Following A Plan |

DEVELOPMENT

- Requirements, Version Control, Test Case Management, Bug Tracking

TESTING

- Unit, Integration, Exploratory, Load, Automated UI, Performance

DEPLOYMENT

- Environment Definition, Provisioning And Configuration
- Application Configuration And Deployment
- Approval Workflows And Automation

MONITORING

- Application Performance Monitoring
- Alerts And Notifications

DEVOPS METRICS

- **Agility Performance Indicators**
 - Deployment Frequency
 - Change Lead Time
- **Reliability Performance Indicators**
 - Change Fail Rate
 - Mean Time To Detect & Repair

KEY VALUES OF DEVOPS

1. Frequent Deployments
2. Small Amounts Of Code Change
3. Better Collaboration And Communication
4. Shorter Software Delivery Cycles
5. Higher Software Quality
6. Faster Time To Market
7. Lower Failure Rates
8. Shortened Lead Time

OODA LOOP (OBSERVE, ORIENT, DECIDE AND ACT)

- Goal Of Devops

DEVOPS PRACTICES

1. Configuration Management
2. Release Management
3. Continuous Integration
4. Continuous Deployment
5. Infrastructure As Code
6. Application Performance Monitoring
7. Test Automation

DEVOPS HABITS

1. Team Autonomy And Enterprise Alignment
2. Rigorous Management Of Technical Debt
3. Focus On Flow Of Customer Value
4. Hypothesis Driven Deployment
5. Evidence Gathered In Production
6. Live Site Culture
7. Manage Infrastructure As A Flexible Resource

DEVOPS ESSENTIALS #2

AZURE DEVOPS

- Provides Developer Services To Support Teams To Plan Work, Collaborate On Code Development, And Build And Deploy Applications

DEVELOPERS

- Can Work In The Cloud Using Azure Devops Services Or On-Premises Using Azure Devops Server

AZURE DEVOPS SERVER

- Was Formerly Named Visual Studio Team Foundation Server (Tfs)

AZURE BOARDS

- Delivers A Suite Of Agile Tools To Support Planning And Tracking Work, Code Defects, And Issues Using Kanban And Scrum Methods

PREREQUISITES

1. You Add Users To A Projector Team. You Add Projects To Organizations, And You Add Teams To Projects.
2. You Must Have An Organization And Project.
3. To Add Users To An Organization, You Must Be A Member Of The Project Collection Administrators Group. Organization Owners Are Automatically Members Of This Group.
4. To Add Users To A Project, You Must Be A Member Of The Project Administrators Or Project Collection Administrators Groups.
5. To Add Users To A Team, You Must Be Added As A Team Administrator, Or You Must Be A Member Of One Of The Administrative Groups.

ORGANIZATION

- Is The Container For Several Projects That Share Resources.

PROCESS

- Defines The Building Blocks Of The Work Item Tracking System And Supports The Inheritance Process Model For Azure Boards
- This Model Supports Customization Of Projects Through A Wysiwyg User Interface

PROCESS TEMPLATE

- Defines The Building Blocks Of The Work Item Tracking System As Well As Other Sub-Systems You Access Through Azure Boards

AZURE DEFAULT PROCESS	1. Basic
	2. Agile
	3. Scrum
	4. CMMI

BASIC

- The Most Lightweight And Is In A Selective Preview.
- **ISSUES AND TASKS** Are Used To Track Work
- **EPICS** Are Used To Group Work Under Larger Scenarios
- **TO DO > DOING > DONE**

SCRUM

- Is The Next Most Light-Weight.
- **PRODUCT BACKLOG ITEMS AND TASKS** Are Used To Track Work
- **EPICS AND FEATURES** Are Used To Group Work Under Larger Scenarios
- **NEW > APPROVED > COMMITTED > DONE**

AGILE

- Supports Many Agile Method Terms
- **USER STORIES AND TASKS** Are Used To Track Work
- **EPICS AND FEATURES** Are Used To Group Work Under Larger Scenarios
- **NEW > ACTIVE > RESOLVED > CLOSED**

CMMI

- Capability Maturity Model Integration
- Provides The Most Support For Formal Processes And Change Management.
- **REQUIREMENTS AND TASKS** Are Used To Track Work
- **EPICS AND FEATURES** Are Used To Group Work Under Larger Scenarios
- **PROPOSED > ACTIVE > RESOLVED > CLOSED**

EPIC

- Use To Track Significant Features Or Requirements
- Used To Group Work Under Larger Scenarios

ISSUES

- Use To Track User Stories, Bugs Or Other Smaller Items Of Work

TASKS

- Use To Track Even Smaller Amounts Of Work For Which You Want To Track Time Either In Hours Or Days

BACKLOGS

- Present Work Items As Lists

PRODUCT BACKLOG

- Represents Your Project Plan, The Road Map For What Your Team Plans To Deliver
- Provides A Repository Of All The Information You Need To Track And Share With Your Team

PORTFOLIO BACKLOGS

- Allow You To Group And Organize Your Backlog Into A Hierarchy

SETTING PRIORITY	
1	Product Cannot Ship Without The Successful Resolution Of The Work Item, And It Should Be Addressed As Soon As Possible
2	Product Cannot Ship Without The Successful Resolution Of The Work Item, But It Does Not Need To Be Addressed Immediately
3	Resolution Of The Work Item Is Optional Based On Resources, Time, And Risk
4	Resolution Of The Work Item Is Not Required

EFFORT

- Provide A Relative Estimate Of The Amount Of Work Required To Complete An Issue.

THREE CLASSES OF BACKLOGS

PORTFOLIO BACKLOGS

- Typically Track High-Level Features, Scenarios Or Epics.
- Product Backlog
- Contains A Prioritized List Of User Stories, Deliverables Or Work You Plan To Build Or Fix.

PORTFOLIO BACKLOGS

- Help You Organize Your Product Backlog Into A Hierarchy Of Elements.

SPRINT BACKLOGS

- Contain Just Those Items That Each Team Is Working On During A Scheduled Sprint Or Iteration Period.

DEVOPS ESSENTIALS #3

TWO TYPES OF BOARDS

1. Kanban
2. Taskboards

KANBAN AND TASKBOARDS

- Support Visualizing The Flow Of Work And Monitoring Metrics To Optimize That Flow.

KANBAN BOARDS

- Track Requirements, Are Sprint-Independent, And You Monitor The Flow Through The Cumulative Flow Chart.

TASKBOARDS

- Track Tasks Defined For A Sprint And You Monitor The Flow Via The Sprint Burndown Chart.

AREA PATHS

- Allow You To Group Work Items By Team , Product, Or Feature Area. Whereas,

ITERATION PATHS

- Allow You To Group Work Into Sprints, Milestones, Or Other Event-Specific Or Time-Related Period.