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| --- | --- | --- | --- | --- |
| Type | ID | Concern | Quality Attribute | Relate use case |
| Performance | QA.P1 | Response time | The system execute operation immediately | Sale transaction |
| Availability | QA.A1 | Stamina | System can run normally when get high number of transactions | * Sale transaction. |
| QA.A2 | Ability to operate continuously | Ensure system operate constantly (Turn off a database server) | * Manage store. * Sale transaction. |
| QA.A3 | Ability to operate continuously | Ensure system operate constantly (Turn off a web server) | * Manage store. * Sale transaction. |
| Security | QA.S1 | Against attacking | Resist attack to database | * Manage store. * Sale transaction. |

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| QA.P1 Performance Scenario. The system execute operation immediately | |
| Portion of scenario | Possible value |
| Source | Cashiers |
| Stimulate | Make random 1000 sale transaction request. |
| Artifact | Sale controllers |
| Environment | System operating environment (runtime) – normal mode |
| Response | * Show product list. * Notify product list with quantity of each other, total, and customer information. Sale successful. |
| Response measure | Average time of request from get product list to show must less than 500 milliseconds.  Average time of request to check out and calculate must less than 1 second. |

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| QA.A1 Availability Scenario. System can run normally when get high number of transactions | |
| Portion of scenario | Possible value |
| Source | Cashiers |
| Stimulate | Make random 100 transactions at the same time. |
| Artifact | Sale controllers. |
| Environment | System operating environment (runtime) – normal mode |
| Response | * Show product list. * Notify product list with quantity of each other, total, and customer information. Sale successful. |
| Response measure | Average time of each get product list request to show must less than 2000 milliseconds.  Average time of request to check out and calculate must less than 3 second. |

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| QA.A2 Availability Scenario. Ensure system operate constantly. | |
| Portion of scenario | Possible value |
| Source | Incident at the server, lost connect to database server. |
| Stimulate | Turn off a database server. |
| Artifact | Database server. |
| Environment | System operating environment (runtime) – normal mode |
| Response | System switch to use backup database server when problem occur immediately and automatically. |
| Response measure | System still running without interruption. |

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| QA02A3 Availability Scenario. Ensure system operate constantly. | |
| Portion of scenario | Possible value |
| Source | Incident at the web server, crash web server. |
| Stimulate | Turn off a web server. |
| Artifact | Web server |
| Environment | System operating environment (runtime) – normal mode |
| Response | System redirect all access from crash server to another. |
| Response measure | System still running without interruption. |

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| QA03S1 Security Scenario. Resist attack to database. | |
| Portion of scenario | Possible value |
| Source | Hacker |
| Stimulate | Hacker attack to system, collect information or try to break out system. |
| Artifact | Database. |
| Environment | System operating environment (runtime) – normal mode |
| Response | Block the hijack command, not perform ​​the operations and notify to administrator.  Set access permission, block access not allowed. |
| Response measure | Ensure that no any external attack can get into the database. |