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| --- | --- | --- | --- | --- |
| Scenario #：A1 | | Scenario: 服务故障与恢复 | | |
| Attribute(s) | Availability | | | |
| Environment | Normal operations | | | |
| Stimulus | One of the SERVICE fails | | | |
| Response | 0.999999 availability of switch | | | |
| Architectural decisions | Sensitivity | Tradeoff | Risk | Nonrisk |
| Backup SERVICE | S1 | T4 | R5 |  |
| No backup data channel |  |  |  | N6 |
| Watchdog | S2 |  |  |  |
| Heartbeat | S3 |  |  |  |
| Reasoning | 保证所有服务都可以访问。  确保某个服务进程异常终止后可以在5min内启动（at Risk5）。  通过对某个服务启动多个备份，某个副本出现异常可以通过访问其他副本来代替，让用户没有察觉，正常访问。 | | | |
| Architecture diagram | 文章分类  文章推荐  文章搜索 | | | |

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| Scenario #：A2 | | Scenario: 网络拥堵处理 | | |
| Attribute(s) | 可用性 | | | |
| Environment | 正常操作 | | | |
| Stimulus | 因网络拥堵无法从服务器获取到新的文章 | | | |
| Response | 向用户反映网络问题 | | | |
| Architectural decisions | Sensitivity | Tradeoff | Risk | Nonrisk |
| Backup | S1 | T4 | R5 |  |
| No backup data channel |  |  |  | N6 |
| Watchdog | S2 |  |  |  |
| Heartbeat | S3 |  |  |  |
| Reasoning | 确保网络发生拥堵时用户客户端能够保持正常的数据显示。  客户端数据库保持一定数量的缓存文章  网络故障后继续尝试请求三次，仍然无法获取数据后提示用户。 | | | |
| Architecture diagram |  | | | |

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| Scenario #：A3 | | Scenario: 故障熔断与负载均衡 | | |
| Attribute(s) | 可用性 | | | |
| Environment | 正常操作 | | | |
| Stimulus | 用户向服务器发起请求 | | | |
| Response | 通过负载均衡机制调用服务 | | | |
| Architectural decisions | Sensitivity | Tradeoff | Risk | Nonrisk |
| Backup | S1 | T4 | R5 |  |
| No backup data channel |  |  |  | N6 |
| Watchdog | S2 |  |  |  |
| Heartbeat | S3 |  |  |  |
| Reasoning | 使用户可以得到最快的响应。  使不可用服务及时从服务列表中剔除。  确保平分各个服务器的压力。 | | | |
| Architecture diagram |  | | | |

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| **Scenario#:A4** | | | 检测和修复损坏的数据库 | | | |
| Attribute(s) | | 可用性 | | | | |
| Environment | | Normal operations | | | | |
| Stimulus | | Database failed | | | | |
| Response | | 0.999999 availability of database | | | | |
| Architectural decisions | | | Sensitivity(灵敏度） | Tradeoff（交易） | Risk（风险） | Nonrisk（非风险） |
| 备份数据库 | | | S2 |  | R8 |  |
| (无备用数据通道) | | | S3 | T3 | R9 |  |
| 看门狗 | | | S4 |  |  | N12 |
| 故障转移路由 | | | S5 |  |  | N13 |
| Reasoning | 确保主数据库发生故障时，在3秒内切换到备份数据库  定时进行主数据库和备份数据库的复制 | | | | | |
| 架构图 | http://tc.sinaimg.cn/maxwidth.2048/tc.service.weibo.com/s2_51cto_com/8badd6906aaa47b2124efc257b3945f8.jpg | | | | | |