



SaaS Solutions from CA Technologies – Root Cause Analysis (RCA)

CA supporting cross-functional teams have conducted a root cause analysis on the event reported. This report captures the findings and provides an insight into:

- Causes that contributed to the recent event observed.
- Corrective actions taken by CA support team to remediate.

Summary

| | | | |
|--|--|---------------------------|----------------------|
| Product/Service Impacted | Agile Central | Incident ID Number | |
| Type of Outage | <input checked="" type="checkbox"/> Unplanned Outage | Time when detected | 2016-11-14 4:47 PST |
| | <input type="checkbox"/> Performance Degradation | Time when resolved | 2016-11-14 09:50 PST |
| Affected Components and/or Applications | | | |
| Impact to Customer | System was unavailable | | |

Root Cause Analysis

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|-------------------------------------|-----------------------|--|
| <input checked="" type="checkbox"/> | Application | The initial cause of the outage was a failure in the inter-process communication in 3 parts of the application stack (Kafka, Zookeeper and ALM). Kafka is our message bus; Zookeeper provides configuration information to Kafka and ALM is part of the Agile Central application stack. This failure caused message queues on Kafka to stop processing. At 5am PST a P1 was declared and resources from support and engineering were pulled in. After about 1 hour of attempts to triage and recover the environment the decision to switch to the disaster recovery site was made to restore service. During the switch to the disaster recovery site, a previously unseen issue with DNS replication was encountered. Identifying and remediating the issue delayed restoring service to the application. Service was completely restored to all customers at 9:50am PST. |
| <input type="checkbox"/> | Database | |
| <input type="checkbox"/> | Hardware | |
| <input type="checkbox"/> | Network | |
| <input type="checkbox"/> | Product Defect | |
| <input type="checkbox"/> | Third Party/Vendor | |
| <input type="checkbox"/> | Configuration/Process | |
| <input type="checkbox"/> | Other | |

Recovery Details

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| Switched to disaster recovery site. |
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Immediate Mitigation Steps

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| <input type="checkbox"/> | Replaced Hardware | The following immediate migration steps were taken: 1). Increased Zookeeper log retention period. 2). Update disaster recovery procedure documentation to include forcing DNS replication. |
| <input checked="" type="checkbox"/> | Configuration Changes | |
| <input checked="" type="checkbox"/> | Procedural Changes | |
| <input type="checkbox"/> | Other | |

Long Term Preventative Measures

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|-------------------------------------|------------------------------------|---|
| <input type="checkbox"/> | Architecture/Infrastructure Change | The following long term prevention measures will be implemented: 1). Move Zookeeper to dedicated hardware 2). Investigate Kafka utilization monitoring. 3). Investigate disaster recovery procedure changes to prevent new data center from trying to utilize old datacenter services. |
| <input type="checkbox"/> | Product/Feature Enhancement | |
| <input checked="" type="checkbox"/> | Procedure/Process Changes | |
| <input type="checkbox"/> | Monitoring/Alerting Change | |
| <input type="checkbox"/> | Other | |
| <input type="checkbox"/> | N/A | |