RHC unavailable time does not match MonLogin due to monitor delay

Last updated by | Abhijeet Survase | Mar 29, 2023 at 2:36 AM PDT

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Issue

MonLogin shows login failure at time X and RHC shows unavailable event time X + 4 min

RCA Template

Annotations on RHC portal are sent through 2 mechanisms:

1. Hot path - MDM Monitors that track Login Success rate (example this) – these annotations are calculated purely based on Login_IsSuccess metrics and send out as Unhealthy/Degraded depending on the percentage of login failure. At the time MDM Monitors send health events to RHC, they do not have visibility into RCA (pause resume/deployment/or else) because there are no metrics on pause/resume events that are currently emitted. MDM Monitors submit annotation with “NO_REASON*” as the RCA.
2. Warm path – MDS runners that run periodically and calculate RCA for above health events by running Kusto queries after the fact. They derive RCA from logs and send downtime reason annotation to RHC to supplement the annotations provided above. These are usually send out at least 20-30 minutes (and potentially 2 hours) after the original resource health event has occurred. Emily Gu from availability owns the downtime reason annotation logic.

Example of what happens in <pause/resume> event is as follows:

- Resume event happens at 10:00 through a login.
- Lets say first 2 logins fail at 10:01 and 10:02 respectively
- MDM Monitors are continuously running at a frequency of 2 minutes and with a lookback period of 10 minutes. They calculate Health of each resource based on Login_IsSuccess metric. If they find any health events (degraded/unavailable), they log a resource health event at the time the MDM Monitor finishes running. Depending on the load on each region, each individual run of MDM Monitor can take 2-4 minutes to run.
- Failure at 10:01 will be captured for the first time in MDM monitor that starts running at 10:03 (9:53 – 10:02 bucket). That MDM monitor runs for lets says 3 minutes and submits its results at 10:06. The results that it submits is that it found login failures in the 2 minute window. The way RHC monitors work is that the results are timestamped with the time time MDM monitor finished its execution as opposed to either the actual time when outage happened or the time window for which it executed. That is why when users see

outage on RHC portal, they see the timestamp of 10:06(as opposed to 10:01 , 10:02 when login outage actually happened.

- Users see a health event on RHC portal at 10:06. Reason = “NO REASON”.
- A few minutes/hours later, MDS runners run and detect RCA on this login failure.
- MDS Runners annotate and send the RCA to RHC as <Pause/Resume>.
- RCA Annotations are picked up and used to display on portal based on the priority/timeframe around the actual event.
- Users potentially see an update in their health event at 10:30(just an example). Reason = “Pause/Resume”
    - the reason for 4-5 minutes delay on health events
        - this is by design. We are doing 2 things to make this better
            - Product group is adding the justification for 5 minute delay to health event.
            - Reducing the monitor runtime from 5 min to 2 minutes.
    - Why <pause/resume> events are triggering health events when we know that they are transitional
        - they go through the generic MDM monitors first. MDM monitors do not know about <pause/resume> events
    - If the health events around <pause/resume> events can be stopped
        - according to current design/implementation, we cannot stop health events only around pause/resume events. We are able to annotate them with the correct reason though

Please be noted that <Pause/resume> is one example of RHC annotations. This RCA template works for all RCA generated thourgh warm path.

Sample ICM

https://portal.microsofticm.com/imp/v3/incidents/details/199849896/home

Root Cause Classification Cases resolved by this TSG should be coded to the following root cause: Connectivity: Troubleshoot DB Availability and Connection Errors\Resource Health events

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