Oracle Database Autonomous Health Framework Frequently Asked Questions

Q: What is Oracle Autonomous Health Framework (AHF)?

A: Oracle Autonomous Health Framework (AHF) presents the next generation of tools as components, which work together autonomously 24x7 to keep database systems healthy and running while minimizing human reaction time. Utilizing machine-learning technologies, Oracle AHF provides early warning or automatically solves operational runtime issues faced by Database and System administrators in the areas of availability and performance.

Q: What is autonomous in Oracle Autonomous Health Framework (AHF)?

A: Autonomous in Oracle Autonomous Health Framework refers to the fact that the components in the framework require miminal human intervention to do their work. They run 24x7 in their daemon mode to resolve the operational runtime issues in the database system in the space of availability and performance. These components of Oracle AHF include Cluster Health Monitor (CHM), ORAchk, Cluster Verification Utility (CVU), Cluster Health Advisor (CHA), Trace File Analyzer (TFA), Quality of Service Management (QoSM), Hang Manager, and Memory Guard.

Q: What kind of Availability issues can be resolved with Oracle Autonomous Health Framework (Oracle AHF)?

A: Oracle AHF resolves runtime issues that threaten the availability of the software stack either through a software issue (DB, GI, OS) that can cause the database or one of its instances to become unresponsive, or the issues with the underlying hardware resources (CPU, Memory, Network, Storage) that can cause a server to be evicted from the cluster and shut down all the database instances running there.

Q: What kind of Performance issues can be resolved with Oracle Autonomous Health Framework (Oracle AHF)?

A: Oracle AHF resolves the runtime issues that threaten the performance of the system as seen by the database client or application either due to software issues (bugs, configuration, contention, etc.), or client issues (demand, query types, connection management, etc).

Q: What are the different components in Oracle Autonomous Health Framework?

A: Oracle Autonomous Health Framework consists of both new components such as Cluster Health Advisor and Hang Manager and already existing tools as components that run in daemon mode such as ORAchk, Cluster Verification Utility, Cluster Health Monitor, Cluster Trace File Analyzer, Quality of Service Management, and Memory Guard. These components work 24x7 autonomously (in daemon mode) to address performance and availability issues.

Q: How does Oracle Autonomous Health Framework (Oracle AHF) resolve availability and performance issues?

A: Oracle AHF components work 24x7 in daemon mode to address the availability and performance issues, and ensure high availability for the database system. They collaborate with each other to provide a framework that continuously monitors the database system, maintains best practice configurations, and alerts about vulnerability to known issues. It monitors performance of the database system autonomously and manages resources to maintain SLAs. It also preserves resource availability during common situations of memory stress and resources being blocked by hung sessions. Oracle AHF uses machine learning to even discover potential cluster and database problems, and notifies with corrective actions to prevent the issues altogether. And finally, for the issues that are hard to detect and require Oracle Support, Oracle AHF speeds the issue diagnosis, triage and resolution process.

Q: Is Oracle Autonomous Health Framework integrated with Enterprise Manager?

A: Currently, Oracle AHF components - Cluster Health Monitor (CHM), Quality of Service Management (QoSM), ORAchk and Cluster Health Advisor (CHA) are integrated with Enterprise Manager. Hang Manager and Memory Guard use EMCC to send alert notifications.

Q: Where can I see the output for checks performed by Cluster Verification Utility (CVU)?

A: Users can access the results of CVU checks through its generated report in text or HTML file format. These reports can also be saved for later reference.

Q: Hang Manager resolves hangs autonomously. How do I know if a session is being terminated in the process?

A: Hang Manager detects and resolves hangs autonomously. However, it continuously logs all detections and resolutions in DB Alert Logs. So, if a session is terminated, it will be logged in these alert logs. The details of complete hang resolution are also available in dump trace files.

Q: Where can I find details of actions performed by Memory Guard to relieve memory stress?

A: Even though Memory Guard works autonomously, actions performed by it are logged in the audit logs under $ORACLE_BASE/crsdata/node name/qos/logs/dbwlm/auditing.

Q: Is Oracle Autonomous Health Framework a Real Application Clusters -only feature?

A: Oracle Autonomous Health Framework compoents Cluster Health Advisor, and Quality of Service Management require Oracle Real Application Clusters database deployments. However, other components of Oracle Autonomous Health Framework, Memory Guard, ORAchk, Cluster Verification Utility, Cluster Health Monitor, Hang Manager, and Trace File Analyzer do not.

Q: Is Oracle Autonomous Health Framework an 18c-only feature?

A: Oracle Autonomous Health Framework as a framework was introduced in Oracle Database 12 Release 2 and has been enhanced in 18c. However, Oracle Autonomous Health Framework components, Cluster Verification Utility, ORAchk, and Trace File Analyzer, have been in existence before in non-daemon mode. In Oracle Autonomous Health Framework, they have now been launched in their daemon mode where the components work together with other AHF ones to resolve operational runtime issues related to availability and performance in the database system.

Q: What is Cluster Health Advisor?

Oracle Autonomous Health Framework component Cluster Health Advisor (CHA) uses machine learning to provide system and database administrators with early warning of pending performance issues, and root causes and corrective actions for Oracle RAC databases and cluster nodes. It also sends warning messages generated to Enterprise Manager Cloud Control. When Grid Infrastructure (GI) is installed for RAC or RAC One Node database, Cluster Health Advisor is automatically enabled by default.

Q: Most of the components in Oracle Autonomous Health Framework are the tools that I already use. How is Oracle Autonomous Health Framework different?

A: Even though components of Oracle Autonomous Health Framework already exist, their value in Oracle AHF comes from the fact that they run 24x7 in daemon mode working together to resolve runtime issues related to performance and availability in the database systems.

Q: What is Collections Manager in Oracle Autonomous Health Framework?

A: Collection Manager in Oracle Autonomous Health Framework is an Apex application that provides a single view of the health of all the clusters in the database system and helps to identify the availability and performance issues related to best practices and compliance. Each time ORAchk performs its checks, the output (collection) is uploaded into the Collection Manager database. Collection Manager aggregates the data from these collections to display the database system health. With Collection Manager, the user can browse either an individual collection to understand the system health at a give time, compare two collections to assess the change in health of the system over time, or browse multiple collections at a time based on various parameters such as platform, DB version, etc.

Q: How does Hang Manager resolve hangs?

A: Hang Manager autonomously detects and resolves hangs. A hang occurs when a chain of one or more sessions is blocked by another session and are not able to make any progress. Usually, these chains of sessions have a root or a final blocker session which blocks all the other sessions in the chain called the victim session. Once a victim session is selected, Hang Manager applies hang resolution heuristics on the victim. If the chain of sessions or the hang resolves itself automatically, then Hang Manager does not take any action. However, if the hang does not resolve itself, then Hang Manager may resolve the hang by terminating the victim session or if that is unsuccessful, then terminating the process.

Q: Where can I find more information about Oracle Autonomous Health Framework?

Information on Oracle Autonomous Health Framework is available on OracleTechNetwork:

http://www.oracle.com/technetwork/database/options/ahf/overview/index.html

Oracle Autonomous Health Framework also has its own user guide which can be referred to at: http://docs.oracle.com/database/18/ATNMS/toc.htm

Q: What is Trace File Analyzer (TFA) Service?

A: Trace File Analyzer Service is a new feature in18c for users who have implemented Cluster Domain Model. This service is available on Domain Services Cluster for quick self-diagnosis of the issue. In previous versions, Trace File Analyzer provided intelligent collection of only the logs relevant to the issue, reducing the log files to a small list of potential candidates where the issues can be found. In 18c, instead of sending these log files to Oracle Support Servcies, users have the alternative to send these files to an ACFS based repository on Doman Services Cluster, from where TFA Service uses this data identify error events associated with the issue and generate an Anomaly Timeline.

Q: What is Anomaly Timeline?

A: Anomaly Timeline is a list of potential problems across the system ordered by time.

Q: Do I need a separate license for Oracle Autonomous Health Framework?

Oracle Autonomous Health Framework consists of multiple components. Oracle Autonomous Health Framework compoents Cluster Health Advisor and Quality of Service Management, require an Oracle RAC license. However, the other components, Cluster Health Monitor, Cluster Verification Utility, ORAchk, Trace File Analyzer, Memory Guard, and Hang Manager do not. Please follow this link to the license guide for more information: http://docs.oracle.com/database/18/DBLIC/toc.htm

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