**Composition Policies**

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| --- | --- |
| Use-Case Description | Composability Manager— Get Request From Client |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Show Aggregated Resource Expected Performance |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Client request Fulfilled |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Record Modified Resource Data Into New Vertex |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Gather Network Congestion Metrics |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Gather Batch Startup Latency |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Parse Aggregated Resource IO Performance |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Gather Aggregated Memory Transaction Bandwidth |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Gather Batch Runtime Application Name |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

|  |  |
| --- | --- |
| Use-Case Description | Composability Manager—Record Aggregated Resource Performance as Vertex |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Receive Client Log Information POST |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Receive Client Log Information POST |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Parse Client Log Information POST |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Gather Runtime |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Get Hop Distance for Aggregation Client to Resource |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Add Data Clustering as Edge |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Get Resource QoS |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Get Resource Connections |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Get Best Resource Composition Request |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Provide Resource Composition Decision |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Provide Best Resource Failover Options |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Check Resource Connections |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Get Resource Features |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Calculate Client to Resource Paths |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Calculate Client to Resource Paths |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Send Resource Failover Option |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager— |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

**Resource Events**

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| --- | --- |
| Use-Case Description | Composability Manager---Create Log Table |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager----Execute\_Change |
| Actors | Composability Manager, Janusgraph database, Log\_Event, Report\_new\_resource\_and\_create\_graph\_entry, Report\_deleted\_resource\_and\_delete\_graph\_entry, Report\_resource\_issue\_and modify\_graph\_entry |
| Description | Report event, resource, description, severity, resource connections, and path is logged time and date and execute appropriate graph database operation |
| Input Data | MessageID, event type, resource, description, severity, proposed resolution, resource connections, path, date, time |
| Pre-Conditions | Composability Manager is running, Janusgraph database is running, Events are registered with Sunfish-Redfish service |
| Post Conditions | Report is sent to Composability Manager clients and graph database is updated with new information |
| Trigger | Call is made from Log\_Event block |
| Normal Flow | * Parse the Event type * If Event type is ‘Create’, call Report\_deleted\_resource\_and\_create\_graph\_entry * Return ‘Success’ |
| Alternate Flow 1 | * Parse the Event type * If Event type is ‘Delete', call Report\_new\_resource\_and\_delete\_graph\_entry * Return ‘Success’ |
| Alternate Flow 2 | * Parse the Event type * If Event type is issue or solution, call * Report\_resource\_issue\_and modify\_graph\_entry |

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| --- | --- |
| Use-Case Description | Composability Manager----Register Client Event Logger |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—List-Available-Events |
| Actors | Composability Manager Resource Control Operations-List-Logged-Events |
| Description | Provide a current running list of Resource Events |
| Input Data | Beginning time period, ending time period |
| Pre-Conditions | Composability Manager is running, events are registered with Sunfish service |
| Post Conditions | Logs are searched for and dumped to List-Log-Events block |
| Trigger | Client request for logs during a time period |
| Normal Flow | * Check to see if the event type, begin time, and end time are supplied * Call List\_Available\_Events with: event type (all, specific), begin time, end time * SELECT \* FROM clicks WHERE campaign\_id=? AND date\_time>=? AND date\_time <=? * Return logs to List-Logged-Events |
| Alternate Flow 1 | * Check to see if the event type, begin time, and end time are supplied * If inputs aren’t complete, return error |
| Alternate Flow 2 | * Check to see if the event type, begin time, and end time are supplied * Call List\_Available\_Events with: event type (all, specific), begin time, end time * SELECT \* FROM clicks WHERE campaign\_id=? AND date\_time>=? AND date\_time <=? * Return successful empty logs to client |

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| --- | --- |
| Use-Case Description | Composability Manager—Register For Events |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager---Report\_new\_resource\_and\_create\_new\_graph\_entry |
| Actors | Composability Manager, Janusgraph database, Execute\_Change |
| Description | Report new resource and enter the new resource into the graph database |
| Input Data | MessageID, event type, resource, description, severity, proposed resolution, resource connections, path, date, time |
| Pre-Conditions | Composability Manager is running, Janusgraph database is running, Events are registered with Sunfish-Redfish service |
| Post Conditions | Report is sent to Composability Manager Event clients, graph database entry is updated |
| Trigger | Call is made from Execute\_Change |
| Normal Flow | * Report resource issue to clients * If issue is on the resource   + Call Search\_Graph for resource   + Call Modify\_Resource\_Detail * Return ‘Success’ |
| Alternate Flow 1 | * Report resource issue to clients * If issue is a connection   + Call Search\_Graph for edge   + Call Modify\_Resource\_Detail   + Call Delete\_Resouce\_Edge   + Call Modify Resource\_Path * Return ‘Success’ |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager----Report\_resource\_issue\_and\_modify\_graph\_entry |
| Actors | Composability Manager, Janusgraph database, Execute\_Change |
| Description | Report event issue or resolution, modify the graph database with new information |
| Input Data | event type, resource, description, severity, proposed resolution, resource connections, path, date, time |
| Pre-Conditions | Composability Manager is running, Janusgraph database is running, Events are registered with Sunfish-Redfish service |
| Post Conditions | Report is sent to Composability Manager Event clients, graph database entry is updated |
| Trigger | Call is made from Execute\_Change |
| Normal Flow | * Report resource issue to clients * If issue is on the resource   + Call Search\_Graph for resource   + Call Modify\_Resource\_Detail * Return ‘Success’ |
| Alternate Flow 1 | * Report resource issue to clients * If issue is a connection   + Call Search\_Graph for edge   + Call Modify\_Resource\_Detail   + Call Delete\_Resouce\_Edge   + Call Modify Resource\_Path * Return ‘Success’ |
| Alternate Flow 2 |  |

|  |  |
| --- | --- |
| Use-Case Description | Composability Manager—Report Deleted Resource and Delete Graph Entry |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager----Log Event |
| Actors | Composability Manager, Cassandra Database, Sunfish Event Service |
| Description | Log MessageID, event, resource, description, severity, resource connections, and path is logged time and date |
| Input Data | MessageID, event type, resource, description, severity, proposed resolution, resource connections, path, date, time |
| Pre-Conditions | Composability Manager is running, Cassandra database is running, Cassandra database log table created, Events are registered with Sunfish-Redfish service |
| Post Conditions | MessageID, event type, resource, description, severity, proposed resolution, resource connections, and path is logged with date and time |
| Trigger | Sunfish signals an event has occurred |
| Normal Flow | * Check to see if the table is created * Record MessageID, event type, resource, description, severity, proposed resolution, resource connections, path, date, time * Execute\_Change with log information |
| Alternate Flow 1 | * Check if the MessageID, event type, resource, description, severity, proposed resolution, resource connections, and path are supplied * If inputs aren’t complete, retry * If retries fail, return error * Record MessageID, event type, resource, description, severity, proposed resolution, resource connections, path, date, time * Execute\_Change with log information |
| Alternate Flow 2 | * Check to see if table is created * If table isn’t complete, create table * Record MessageID, event type, resource, description, severity, proposed resolution, resource connections, path, date, time * Execute\_Change with log information |

**Authorization Block**

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| --- | --- |
| Use-Case Description | Composability Manager—Tenancy |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Security Value |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |

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| --- | --- |
| Use-Case Description | Composability Manager—Security Association |
| Actors |  |
| Description |  |
| Input Data |  |
| Pre-Conditions |  |
| Post Conditions |  |
| Trigger |  |
| Normal Flow |  |
| Alternate Flow 1 |  |
| Alternate Flow 2 |  |