Upgrade to Enterprise Manager Cloud Control 12c Release 1 (12.1.0.1)

Akanksha Sheoran Kaler
Senior Product Manager
EM 12.1 Upgrade Considerations and Requirements

• Significant architectural enhancements imply
  – EM 12.1 OMS can only work with EM 12.1 agents
  – This fundamental fact has brought about two changes:
    1. The overall procedure required to complete the upgrade has changed significantly
    2. It has highlighted the necessity to provide a guided workflow through the entire process

• Upgrade is designed to be smooth and non-disruptive based on following requirements:
  – Minimal down time, if at all
  – Pre-deployment checks and validations
  – End to end automation of upgrade process
  – Dashboard and reporting functionality to administer and manage upgrade process
  – Support both turn-key and phased approach
  – Ability to restore/revert to old Grid Control quickly.
  – OS Migration along with the Grid Control Upgrade
EM 12.1 - Simplified Pre-upgrade Console

- Direct Upgrade from 10.2.0.5 /11.1.0.0 Grid Control
- Upgrade patch to receive Upgrade console
- Pre-Upgrade Console:
  - Provides a guided workflow for your Upgrade
  - Single source of truth for upgrade impact (reports)
  - Perform 12.1 mass agent deployment with required plug-ins
  - Software Management for 12.1 Agent and plug-ins
  - Runs dynamic pre-upgrade repository checks
  - Before 12.1 agents are activated administrators can run readiness checks.
EM 12.1 – Upgrade Approaches

• **Complete cutover with higher downtime (Using One System)**:
  - EM OMS and all agents upgraded at the same time, but with some downtime.
  - Both pre-12.1 and 12.1 installations co-exist but only one of them will be active at any given point in time.
  - Entire system (agents, OMS, Repository) gets upgraded/migrated to 12.1 simultaneously.

• **Phased cutover with minimal downtime (Using Two Systems)**:
  - Upgrade can be staggered over time, but this incurs minimal monitoring downtime.
  - Both pre-12.1 and 12.1 systems co-exist and be active simultaneously until all targets from ‘pre-12.1’ are migrated to 12.1 system in an orderly fashion.
  - 12.1 system will only contain 12.1 agents/targets.

*Henceforward referred to as One-system and Two-system approaches, respectively
One System Approach

1. Start with existing 10.2.0.5 / 11.1 system
2. Deploy EM 12.1 agents
3. Run health-check on EM 12.1 agents
4. Switchover
   a) Quiesce pre-12.1 agent queues
   b) Shutdown the pre-12.1 agents
   c) Start EM 12.1 agents
5. Backup the repository (manual)
6. Shutdown the old OMS
7. Install EM 12.1 OMS and upgrade the repository
8. Start the EM 12.1 OMS
9. Start accepting EM 12.1 agent connections
## One System Approach Vs Prior Upgrades

<table>
<thead>
<tr>
<th>One System Approach</th>
<th>Prior Version Upgrades</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automated agent upgrade</td>
<td>Doesn’t use the job system, major version agent upgrade required SSH</td>
</tr>
<tr>
<td>Health checks and monitoring console available</td>
<td>No health checks or monitoring of upgrade</td>
</tr>
<tr>
<td>Out of place upgrade</td>
<td>Agent patching was in-place</td>
</tr>
<tr>
<td>OMS, Repository and agent switch over related downtime</td>
<td>OMS / Repository downtime, agents continue to collect data</td>
</tr>
<tr>
<td>Fallback possible</td>
<td>Fallback requires restore</td>
</tr>
<tr>
<td>All agent platforms being monitored must be available (Oracle will make sure all EM 12.1 agent software is released frequently)</td>
<td>Agent upgrades can be staggered</td>
</tr>
</tbody>
</table>
Two Systems Approach

1. Start with existing 10.2.0.5 / 11.1 system
2. Deploy EM 12.1 agents
3. Backup /restore the repository
4. Deploy / configure OMS and upgrade repository
5. Start the EM 12.1 OMS
6. Shutdown the pre-12.1 agents incrementally and activate 12.1 agents
7. When all agents are successfully moved, decommission the pre-EM 12.1 OMS
EM 12.1 – Post Upgrade Steps

Post Upgrade Console (from EM 12.1)

✓ Deferred data migration
  – Lazy migration of historical data
  – Status tracking from post upgrade console
  – Ability to retry

✓ Accrued target data migration
  – Applicable for two-system approach only
  – Automatic migration of accrued data from old system to EM 12.1

✓ Diff reports
  – Configuration or setup-related changes that were manually made to the old system while 2-system upgrade was happening

✓ Deleting Old Agents
  Ability to perform deletion of old agents from EM 12.1 Console
# One System Vs Two System

<table>
<thead>
<tr>
<th>One System Approach</th>
<th>Two Systems Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire system goes through downtime</td>
<td>Zero downtime for monitoring</td>
</tr>
<tr>
<td>All agents switched at once</td>
<td>Agents can be switched over incrementally</td>
</tr>
<tr>
<td>Fallback possible using restore</td>
<td>Relatively easy fallback if needed</td>
</tr>
<tr>
<td>No need for additional systems</td>
<td>Requires additional systems</td>
</tr>
<tr>
<td>All agent platforms need to be available for upgrade</td>
<td>Agent upgrades can be staggered</td>
</tr>
<tr>
<td>No additional firewall ports need to be opened for agent</td>
<td>Additional ports to be opened (firewall rule edits needed)</td>
</tr>
<tr>
<td>Data migration not needed</td>
<td>Need to migrate “accrued” target data</td>
</tr>
</tbody>
</table>
**Best Practices**

1. **Upgrade Console**
   - Decide your Upgrade approach

2. **View the Upgrade Impact report**

3. **Manage your 12.1 software in a central location**

4. **Mass Deploy 12.1 Agents**

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**1 System**

1. **Perform Health check**
2. **Switch over agent**
3. **Backup existing GC Repository**
4. **Install EM 12.1 OMS and upgrade the repository**

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**2 System**

1. **Backup and restore the repository (can be on diff host)**
2. **Install EM 12.1 OMS and upgrade the resorted repository**
3. **Perform Health check**
4. **Incremental agent switchover**

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**Post Upgrade Console**

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Documentation and Help

• Always refer to the Upgrade guide on OTN:
  http://download.oracle.com/docs/cd/E24628_01/index.htm

• Post your queries on Install forum for any help:
  http://myforums.oracle.com/jive3/forum.jspa;jsessionid=8a01b91e30dc54e9d3d2878542859196b34aadeed060.e3mNb38NcheTe3mMbhiQa38Sb40?forumID=4137&start=0

• Installation and Upgrade collateral page on OTN
  http://www.oracle.com/technetwork/oem/install-upgrade-496677.html
Q & A
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