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ENTERPRISE MANAGER

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Fusion Apps Administration: Case Study – Utilizing Administration Groups and Target Properties for Efficient Administration

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Executive Overview

Enterprise Manager Cloud Control 12c (EM 12c) is recommended by Oracle as the preferred product to manage Fusion Applications. EM 12c provides complete, end-to-end monitoring, alerting, and diagnostic capabilities for Fusion Applications.

Depending on the scope of an implementation, the task of managing Fusion Applications can be challenging. The challenge stems primarily from the high number of targets that comprise a Fusion App Instance or Product Family, the different technologies that comprise the underlying tech stack, and the need to ensure that inter-dependent targets are available and performing. In this regard, EM 12c is uniquely qualified to address these challenges.

One of the essential aspects of managing Fusion Applications with EM 12c is the use of the grouping capabilities in EM 12c, which includes Administration Groups, Target Properties, and Dynamic Groups.

The purpose of this case study is to highlight the design and implementation of EM 12c Administration Groups and Target Properties at a customer that uses Fusion Apps in their production environment, and uses EM 12c to monitor and manage that Fusion Apps Instance. The objective of this whitepaper is to:

- Provide a real-world example of the use of Administration Groups and Target Properties for Fusion Apps management

- Demonstrate how EM 12c, Administration Groups, and Target Properties can facilitate the process of managing Fusion Applications

- Provide a starting point for new customers who are designing and configuring EM 12c for Fusion Apps management

The benefits of using Administration Groups and Target Properties to manage Fusion Applications are substantial, and include:

- Easily categorize and define the hundreds of targets per Fusion App instance into manageable units

- Ability to automatically apply and synchronize Monitoring Templates and Compliance Standards to hundreds of different Fusion Apps targets

- Facilitate the creation of Dynamic Groups and Groups for Fusion Apps targets

- Provide the underpinnings for efficient use of Incident Rules, Blackouts, Jobs, and Roles/Responsibilities

Caveats

This case study details certain aspects of EM 12c configuration and implementation at a customer that is using Fusion Applications in production. Certain aspects of the configuration and implementation were performed with Oracle personnel, including the authors of this whitepaper.

The purpose of this case study is to show how one customer designed and implemented Administration Groups and Target Properties to meet their requirements. It is not meant to prescribe the only way to set up administration groups to manage Fusion Apps. It is hoped that this implementation provides ideas to others on how they might design their own implementation.

Customer and Environment Details

As mentioned previously, this case study covers a customer using Fusion Apps in their production environment. EM 12c is used in production as well.

Due to corporate policies, the customer prefers not to disclose their name, but have agreed to allow Oracle to use their implementation details for educational purposes.

Details on their Fusion Apps implementation include:

- Using primarily Financials and Procurement

- Customer is on FA version 11.1.0.7

- AIX platform with Oracle 11.2.0.2 DB

Details on their EM 12c implementation include:

- EM 12c 12.1.0.3

- Total targets are approximately 5000

- Two FA instances, one in Production, totaling approx. 1500 targets

- Managing custom applications and custom databases

Primer: Administration Groups

Administration groups are a special type of group used to fully automate the application of Monitoring Templates, Compliance Standards, and Cloud Policies to targets within a certain group. Administration Groups greatly simplify the process of setting up and maintaining targets for management in Enterprise Manager.

Given the high number of targets that comprise a Fusion Application Instance or Product Family, Administration Groups play a fundamental role in facilitating the logical categorization of these targets.

It should also be noted the assignment of Properties to Fusion Apps targets can also be leveraged when creating Dynamic Groups.

For more information on Administration Groups, please refer to the EM 12c documentation.

Primer: Target Properties

The attributes used to define administration group membership criteria are based on Target Properties, which specify user-defined fields for any target in EM 12c.

Target Properties are heavily used to manage Fusion Applications. For example, customers can elect to use certain fields, and certain user-defined tags, to categorize all the targets that comprise a CRM Product Family, or to categorize all of the targets that are managed by a certain department.

Target properties are used in the creation of Administration Groups, as well as for Dynamic Groups.

For more information on Target Properties, please refer to the EM 12c documentation.

Design: Administration Groups

The process of deciding upon a viable Administration Group design requires careful consideration and debate among all of the stakeholders – not just the Fusion Apps team, but all of the target owners throughout the organization. It is not uncommon for customers to go through three to four iterations of trial-and-error until they arrive at a design that works for their unique business needs.

At this customer, the design team took into account the following considerations:

1. Lifecycle Status: This Target Property is one of the most common aspects of an Administration Group. This customer decided to use "Production", "Staging", and "Test" in their Administration Group.

2. Design reflects the Organization Structure: In this case, the customer wanted their Administration Groups to closely approximate the target ownership within their organization. For example, the DBA team owns all of the databases. The Infrastructure team owns all of the servers, agents, routers, switches, hubs, etc. And the Fusion Admin owns all of the Fusion Apps targets.

3. Targets can or should relate to the FA structure: There is always the question if a specific target type should be included in the Fusion Apps group, or by its target ownership. For example, is a Weblogic Server that runs Fusion Apps better off in the FA group, or the Middleware group? Similarly, is a database that is exclusive to Fusion Apps better off in the FA group, or the DB group? In this particular case, the customer placed all of the FA Middleware targets in the FA group, and placed all of the databases in the DB group.

4. Include BI and IDM as part of the Fusion Instance: The customer considered both BI and IDM targets as part of the Fusion App instance.

Design: Target Properties

In practice, the design of the Administration Groups is done simultaneously with the design of the Target Properties. The design of Target Properties involves deciding which fields will be utilized, and which values are required. At this customer, the following Target Properties were used:

1. Lifecycle Status: Refers to lifecycle status. Valid values are Prod, Staging, and Test

1. Location: Refers to target ownership in the organization. Valid values are Database (DB), Infrastructure (INF), Middleware (MW), and Fusion Apps (FUSEAPPS).

2. Line of Business: Refers to the Fusion Apps Product Families. Note that this Property is not being used in Administration Groups, but is used in Dynamic Groups. Valid values are: FIN (Financials and Procurement), HCM (Human Capital Management), CRM (Customer Relationship Management), COM (Common), PRJ (Projects), SCM (Supply Chain Management), IDM (Identity Management), and BI (Business Intelligence).

3. Department: Refers to different departments in the organization. This Property is not used in Administration Groups, but is used in Dynamic Groups. Examples of departments include Helpdesk, Custom App 1, Custom App 2, Event Group, and Networking.

It is also important to note that not all Target Properties need to be utilized by Administration Groups.

Target Properties are also utilized by Dynamic Groups. Dynamic Groups play an important role in Fusion Apps management, and are utilized in a number of key areas, including Incident Rules, Blackouts, Roles/Responsibilities, etc. A detailed discussion of Dynamic Groups is outside the scope of this document.

In addition, Target Properties can provide useful categorization in other areas of EM 12c, including the "All Targets" list page.

Note on Dynamic Groups

Dynamic Groups play a vital role in managing Fusion Applications as well. The key use cases for Dynamic Groups include Incident Rules, Blackouts, Jobs, and managing Roles/Responsibilities.

Administration Groups and Dynamic Groups share many characteristics, such as the use of Target Properties and automatic updates of new members. Some of the key differences are:

- Dynamic Groups can incorporate Target Types (e.g., Database, Weblogic Server, etc.) as well as Host names in their definitions

- Administration Groups can manage the application of Monitoring Templates, Compliance Standards, and Cloud Policies

- Administration Groups are hierarchical, and child groups inherit properties from parent groups

For example, this customer was receiving an extremely high number of notifications for the SOA Composite Target Type, and made the decision to exclude those notifications. To implement this, the customer created a Dynamic Group that included all of the SOA Composite Targets in their Production environment.
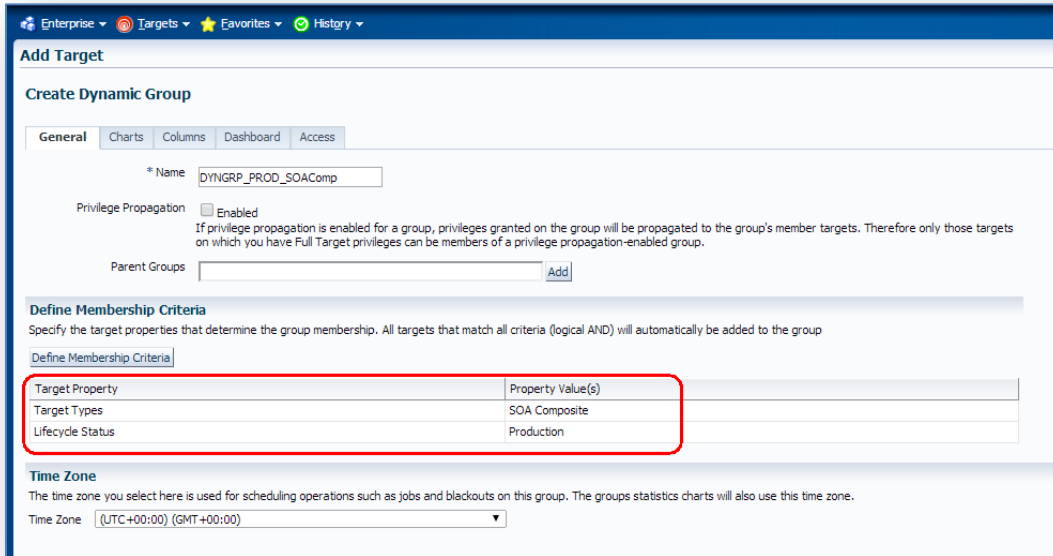
The customer then used this Dynamic Group in one of their Incident Rules to exclude all notifications that were generated by this target type.

Another business requirement was to closely monitor certain "mission-critical" targets in their Test Environment. These targets were identified as: Databases, Listeners, Hosts, and Agents. The customer was able to meet this requirement via Dynamic Groups, as is detailed below:

A complete and thorough coverage of the use of Dynamic Groups is, unfortunately, outside of the scope of this Case Study. However, this topic is covered in a later Case Study on the same customer.

For more information on Dynamic Groups, please refer to the EM 12c documentation.

Implement: Assigning Target Properties to Fusion Apps Targets

Once the design of both Administration Groups and Target Properties has been finalized, the process of assigning Target Properties to Fusion Apps targets is straightforward. There are three ways to assign Target Properties in EM12c, as follows:

- Using the Instance Refresh feature from the Fusion Instance homepage. Note that this is the preferred method for setting properties for Fusion Apps targets, due to the ability to assign a multiple properties to a high number of Fusion App targets in one single process. The customer utilized this method almost exclusively.

- Using EMCLI, with the set_target_property_value verb. The benefit to using the CLI verbs is that it provides a convenient way to do mass updates to targets, as well reducing the chance for human error.

- Manually, on a target-by-target basis. Properties can be set by navigating from any target's homepage to the Properties sub-page (Homepage -> Target Setup -> Properties). Note that the customer utilized this method to set Properties for their Host, Agent, and DB targets.

The following example illustrates the process of assigning Target Properties using the Instance Refresh method.

1. From the Fusion Instance homepage dropdown menu, click on "Refresh Fusion Instance". This will take you to the Discovery interview process. The valid values should default into Step 1 "Functional Setup". Validate the values and click "Next".

2. On the Product Families Step, you can choose one or more Product Families. In this example, we will choose just one Product Family, Oracle Fusion Financials.
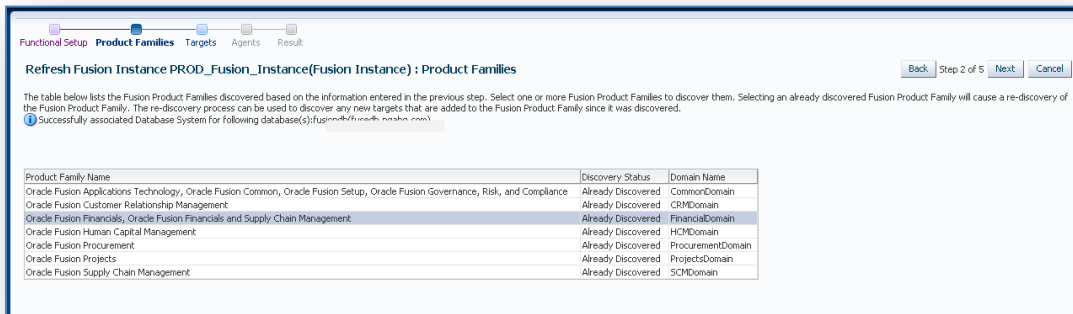
3. In Step 3, "Targets", the valid values should default in. Validate and click next.

4. Step 4, "Agents", is where Target Properties are assigned to multiple Fusion App targets. The values that were entered are:

    a. Lifecycle Status: Production. This value corresponds to the list of valid values in Level 1 of the Administration Group design.

    b. Location: FUSEAPPS. This value corresponds to the list of valid values in Level 2 of the Administration Group design.

    c. Line of Business: FIN. Note that this value is not used in Administration Groups. However, the customer wanted to be able to identify all targets that belonged to a certain Product Family. In this example, we used FIN to identify all targets in the Financials Product Family. Other examples include SCM for Supply Chain Management, HCM for Human Capital Management, and so on.

    d. In this particular example, the Target Properties will be applied to all of the 195 targets within the Financials Product Family.

    Also note the checkbox at the bottom of the page. If checked, the Refresh process overwrites any existing values for the relevant targets.
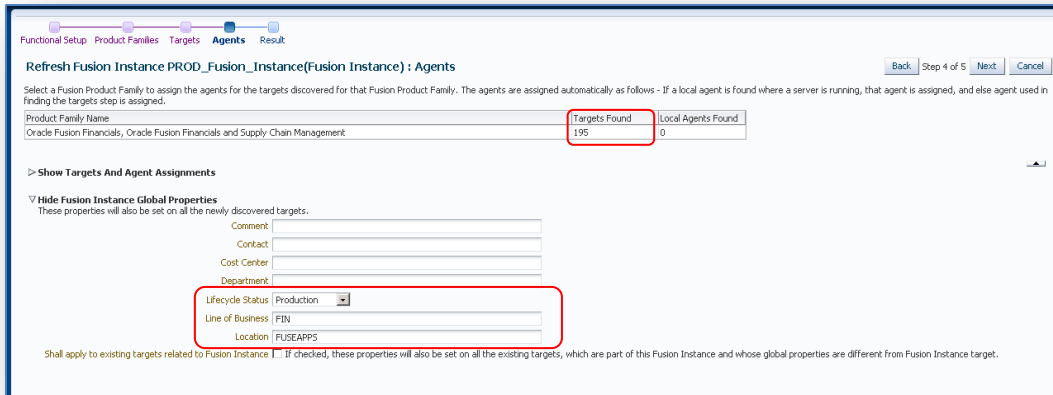
5. Click next for Step 5, "Result", and then "Finish". This launches the process of assigning the Target Properties to the Fusion Apps targets.

6. For BI and IDM targets, Target Properties can be set in a similar manner to the Fusion Apps. From either the BI or IDM Domain homepage, navigate to Weblogic Domain -> Refresh Weblogic Domain -> Add/Update targets.

Implement: Assign Target Properties to non-Fusion Apps Targets

As stated earlier, Target Properties can be set for any target in EM 12c, either manually or by EMCLI. Given the relative small amount of additional targets, the customer set these properties manually.

For example, on the Production database target, "Target Properties" can be accessed via Homepage -> Target Setup -> Properties. Several points are worth noting here:

- A list of valid values from the Administration Group design is displayed above the grid.

- Click on "Edit" to allow the input of Target Properties for certain fields

- Some Properties (e.g., Platform, Version, Operating System, etc.) are automatically populated as part of Discovery.
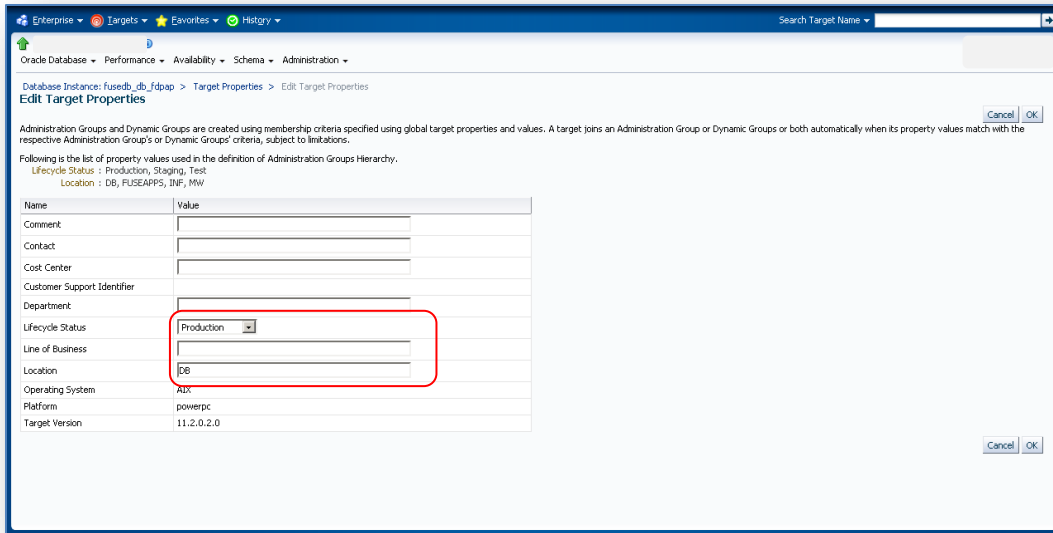
Implement: Administration Group Creation

Once the Target Properties are set on the Fusion Apps targets, the process of creating and populating the Administration Group hierarchy is straightforward.

From the Administration Group Hierarchy page, simply add the appropriate Hierarchy Level, and ensure that the correct values are present in the Hierarchy Nodes. For example, at this customer, the Hierarchy Level (2) keys on the Location Property, which in turn yields four values; DB, INF, MW, and FUSEAPPS.

The following are noteworthy aspects of the Administration Group design:

1. Level 1 is Lifecycle Status. The values that the customer uses are Production (Prod), Staging (Stag), and Test (Test).
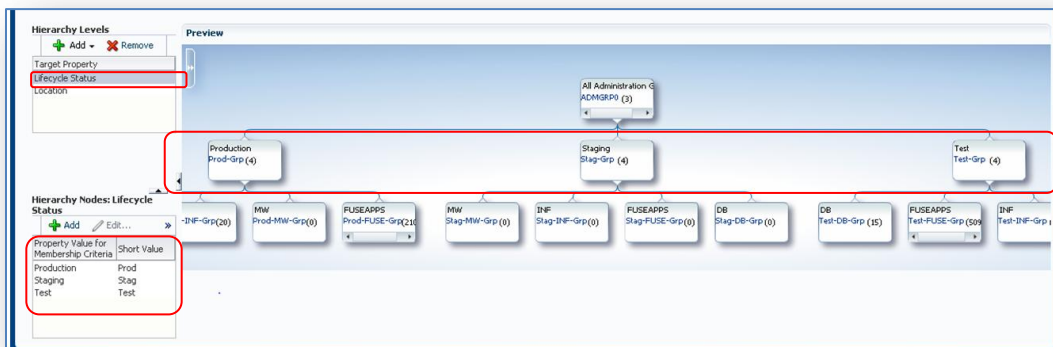
4.   Level 2 is the target ownership in the Organization. The customer uses the "Location" property to denote four categories, which are: Database (DB), Infrastructure (INF), Middleware (MW), and Fusion Apps (FUSEAPPS).
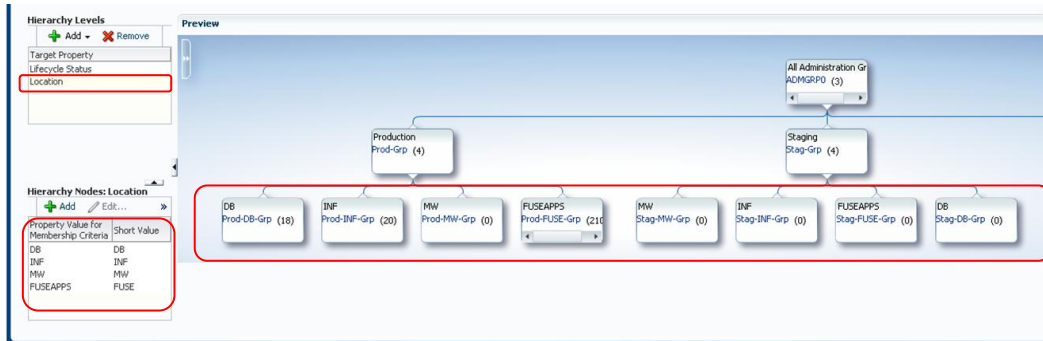
Once the Hierarchy Levels and Nodes have been properly defined, administrators can populate the Group via the "Calculate Members" and "Update" buttons on the Hierarchy page. The "Update" process creates or changes all of the relevant Groups and sub-Groups in EM 12c.

On a related note, administrators might want to set the time zone of the group in this hierarchy before they create the group. This is especially important if they want the groups in different time zones. Time zones are used in groups to determine the time zone for display group charts and as a default in scheduling group operations such as jobs, blackouts, etc.   Also, if the time zone is set in a higher level group in the hierarchy, the same value is set in all the downstream groups.

Implement: Assign Template Collections via Administration Groups

Once the Administration Group has been created, the process of defining and assigning Template Collections can begin.

The Template Collection process defines which:

1.   Monitoring Templates are included in the Collection

2.   Compliance Standards are included in the Collection

3.   Cloud Policies are included in the Collection

Template Assignment refers to the process of assigning a Template Collection to a certain Administration Group.

In this particular case study, we will create a Template Collection and assign it to the Production Fusion Apps (L2) Group.

The Template Collection process followed was:
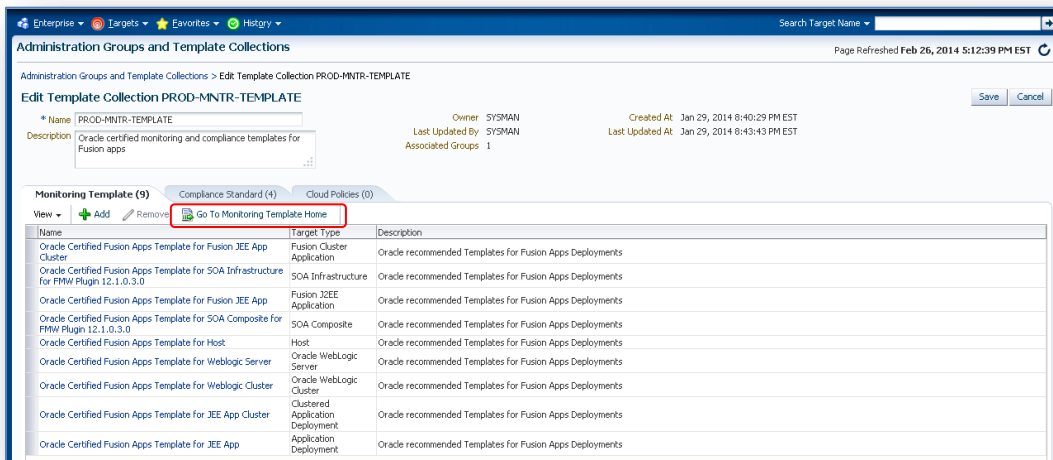
1. Define Template Collections

   a. From the Administration Groups and Template Collections page, click on Template Collections to define the applicable Monitoring Templates, Compliance Standards, and Cloud Policies. In this case, the customer has created a Template Collection called "PROD-MNTR-TEMPLATE".
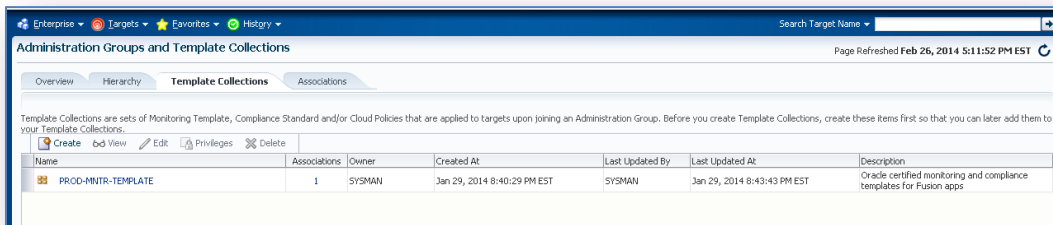
   b. The Monitoring Template tab shows all the individual Monitoring Templates that the customer wants to apply to targets in this Fusion Instance.

      Note that the Monitoring Templates are based on Target Types, and EM 12c will automatically apply the correct Template to the relevant Target Type. For example, the "Oracle Certified Fusion Apps Template for Weblogic Server" will only be applied to the Weblogic Server target type in the Fusion Instance.

      Note that in this version of EM 12c, there are nine Oracle Certified Monitoring Templates for Fusion Applications.

   c. The Compliance Standard tab shows all the individual Compliance Standards that the customer wants to apply to targets in this Fusion Instance. Like Monitoring

Templates, Compliance Standards are based on Target Types, and EM 12c will automatically apply the correct Template to the relevant Target Type.

Note that in this version of EM 12c, there are four out-of-the-box Compliance Standards for Fusion Apps Instances.
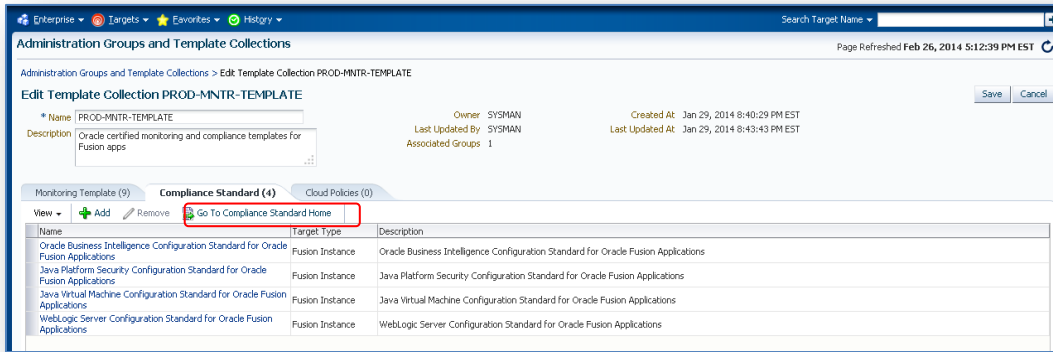
2. Create Associations

   a. The final step in creating Administration Groups is to associate the Template Collection with a particular sub-Group.

   b. On the Associations tab, highlight the appropriate group, and click "Associate Template Collection". Choose one of the Template Collections, and press select. This will launch the process of assigning both the Monitoring Templates and the Compliance Standards to the specific (L2) Group – in this case the Fusion Instance (Production + FUSEAPPS).
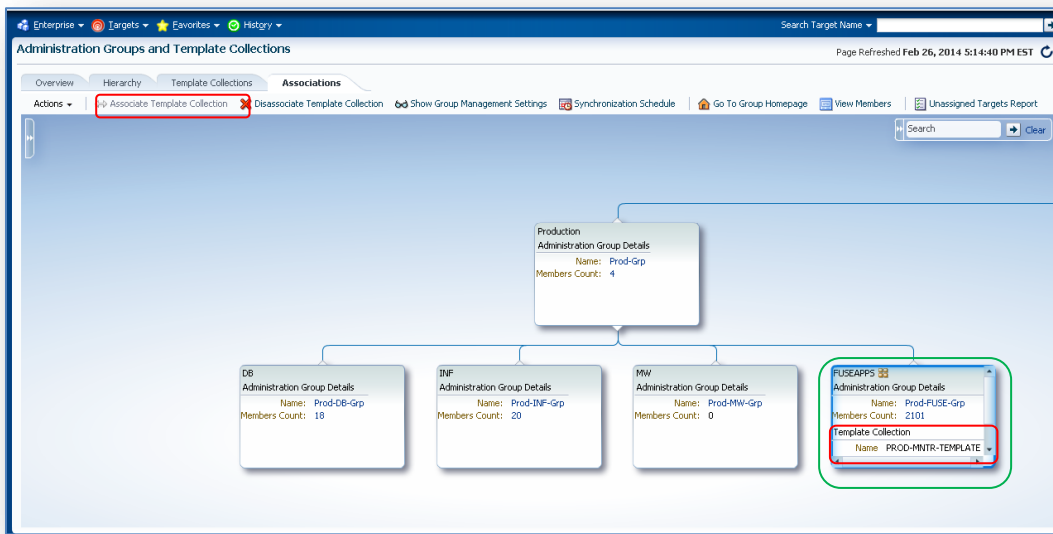
3. Important points to remember

    a. Once the Template Collection has been successfully associated with the target:

        i. Both Monitoring Templates and Compliance Standards will be re-synchronized with the Fusion Apps targets on a recurring basis. The default is every 24 hours.

        ii. Changes to the parameters in the underlying Monitoring Templates are propagated to the Administration Group targets via the re-synchronization process.

        iii. Changes to the number or content of Compliance Rules contained in the Compliance Standard are propagated to the Administration Group targets via the re-synchronization process.

## Viewing and Managing Fusion Apps Targets as Groups

Once the Administration Group has been created and populated, and Target Properties have been set for all of the targets, there are a number of ways that the Groups and the Fusion Apps targets can be viewed.

One way to view the Administration Groups, and its associated sub-groups, is from the Targets -> Groups menu. The screenshot below displays all of the levels (i.e., L1 and L2 in this case study) of the Administration Group. The best example is the "Prod-FUSE-Grp", which displays all of the targets in

the Production Fusion Apps group, as well as identifies which Template Collection is attached to that group.
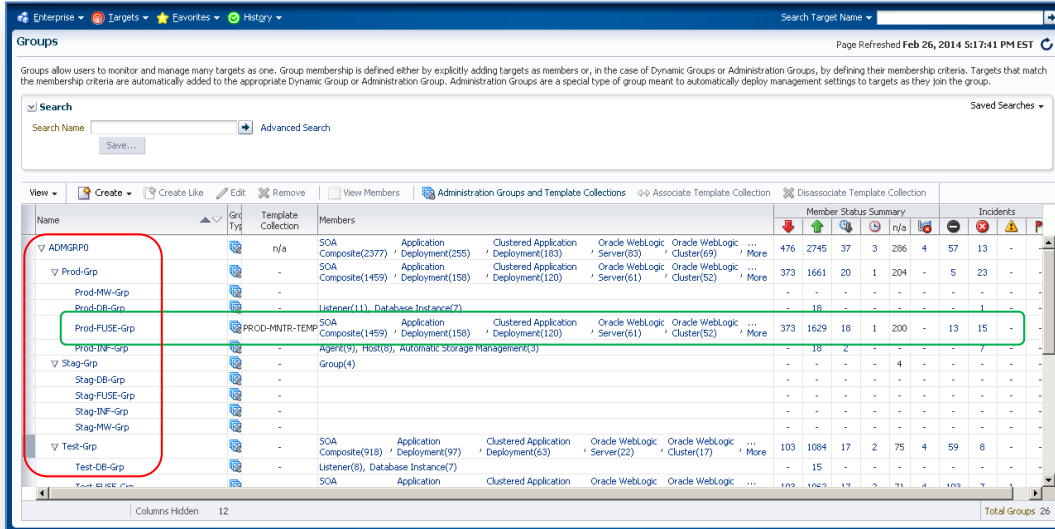
Another by-product of the use of Administration Groups and Target Properties is the organization capabilities found in the "All Targets" page. Note that many of the Target Properties serve as Filters on the LeftNav pane on the "All Targets" page, including Target Version, Location, Line of Business, and Platform, just to name a few.
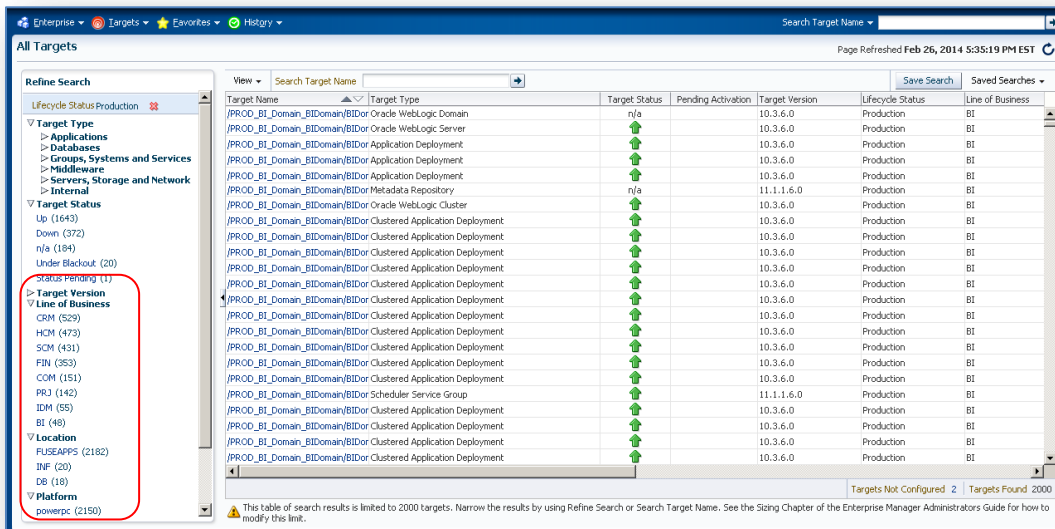
We can also save our filters with the "Save Search" button. In this example, we have filtered on the FIN targets in PROD.
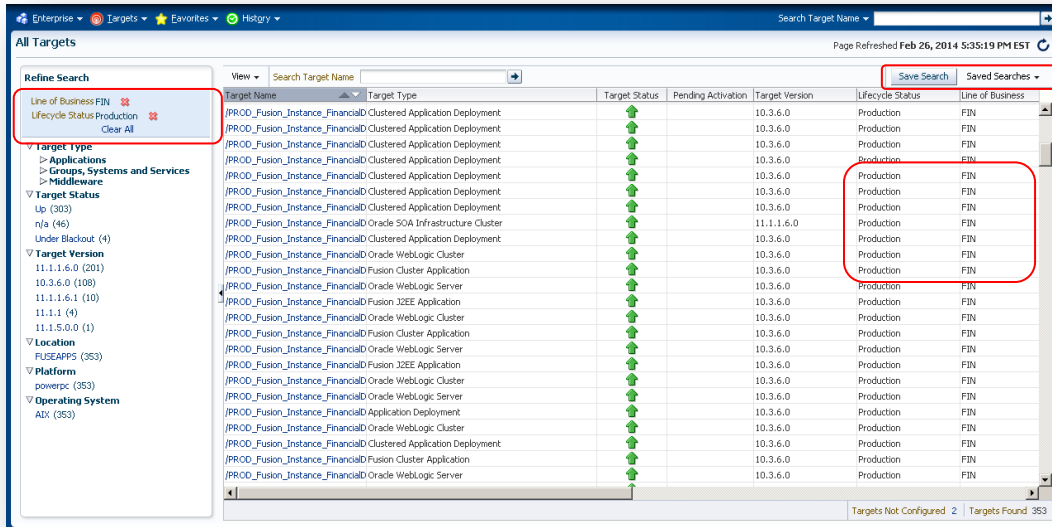
Pros and Cons of Administration Group Design

As stated previously, there are many different ways to implement Administration Groups and Target Properties for Fusion Apps customers. Each customer will need to carefully consider their unique business and organizational needs to arrive at a design that is suitable.

At this particular customer, there are a number of pros and cons with their Administration Group design.

The design has the following advantages:

1. Simple, straightforward

2. Represents their organization structure

3. Geared to smaller organization

The design also has the following disadvantages:

1. Treats all Fusion App Product Families equally. Although the customer must implement the entire suite of Fusion Apps, they are only using a subset of Product Families. The Product Families utilized are Financials (FIN), Procurement (FIN), and Projects (PROJ).

   The disadvantage to the existing design is that there is no distinction in the Monitoring Templates or Compliance Standards between active and (somewhat) dormant Product

Families. For example, the Monitoring Templates for the active Product Families might have different settings than the less active Product Families, such as a higher collection frequency, lower thresholds, and lower occurrences.

There are several potential remedies for this situation, including:

    a.   Create a Level 3 Group called, for example, "Hot" and "Cold". The heavily used Product Families could be placed in the "Hot" Group, and the less active Product Families could be placed in the "Cold Group". Each Hot and Cold Group would have different Template Collections that are assigned to them.

Conclusion

Enterprise Manager Cloud Control 12c (EM 12c) is recommended by Oracle as the preferred product to manage Fusion Applications. EM 12c provides complete, end-to-end monitoring, alerting, and diagnostic capabilities for Fusion Applications.

One of the essential aspects of managing Fusion Applications with Enterprise Manager Cloud Control 12c is the use of the grouping capabilities in EM 12c, which includes Administration Groups, Target Properties, and Dynamic Groups.

The purpose of this case study is to highlight the design and implementation of EM 12c Administration Groups and Target Properties at a customer that uses Fusion Apps in their production environment, and uses EM 12c to monitor and manage that Fusion Apps Instance.

The benefits of using Administration Groups and Target Properties to manage Fusion Applications are substantial, and include:

- Easily categorize and define the hundreds of targets per Fusion App instance into manageable units

- Ability to automatically apply and synchronize Monitoring Templates and Compliance Standards to hundreds of different Fusion Apps targets

- Facilitate the creation of Dynamic Groups and Groups for Fusion Apps targets

- Provide the underpinnings for efficient use of Incident Rules, Blackouts, Jobs, and Roles/Responsibilities

Finally, this case study attempts to explain how one customer designed and implemented Administration Groups and Target Properties to meet their requirements. It is not meant to prescribe the only way to set up administration groups to manage Fusion Apps. It is hoped that this implementation provides ideas to others on how they might design their own implementation.

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