

Cello How-To Guide

Tenant Hierarchy Management

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1 Introduction to Tenant Hierarchy

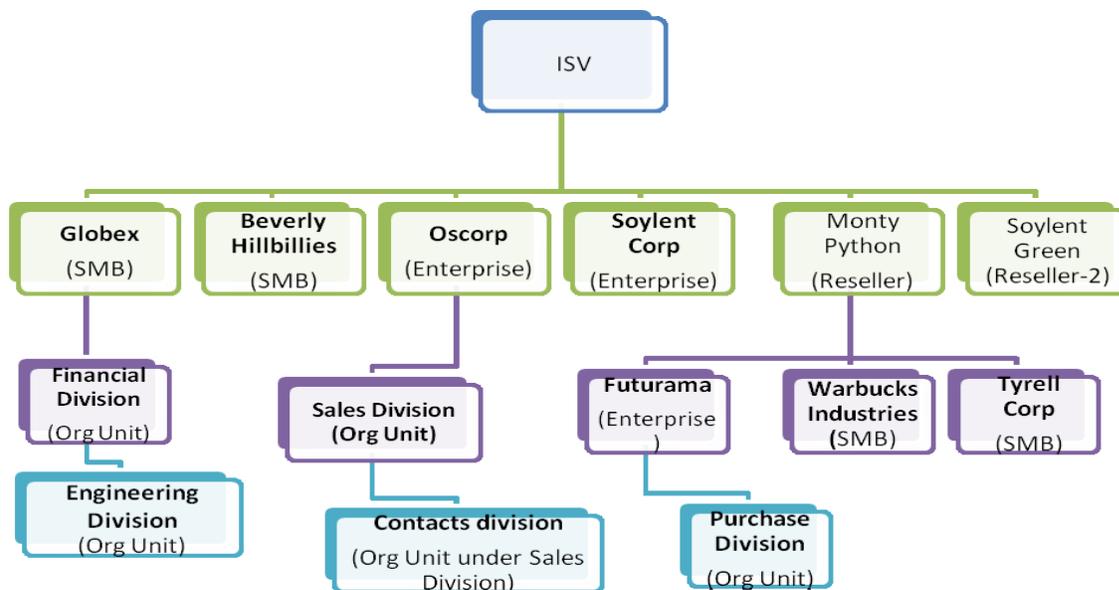
CelloSaaS supports a hierarchical tenant structure i.e. a Potential Subscriber/Customer of a SaaS Product can have Sub tenants aka Child Tenants. These Sub tenants can then create Tenants as their child and so on. These Child can act as a standalone independent Subscribers, and having rules/protocols applied by their Parent Subscribers. The state of having customer under a customer and maintaining relationship between different entities is generally called as tenant hierarchy.

In the complete hierarchical structure, the application provider [ISV] is the Primary tenant of all tenants, only the application provider will be able to create the primary level tenants. These tenants can then create sub tenants under them and this will go on up to n Level and there is no restriction in the number of nodes created under them.

1.1 Tenant Type

CelloSaaS categories the Tenants in three broad ways, they are

1. Small and Medium Business [SMB]
2. Enterprise
3. Resellers



Note: The Tenant categorization is based on the real world logical representation of Business, Organizations, units, branches etc.

Small and Medium Business is an organization or business who wants to subscribe to the product themselves.

Enterprise is a large business who wants to use the product and create sub units or sub divisions under them. This sub division can be based on kind of Business unit they may have i.e. Finance, Engineering, Delivery etc, or based on the regions i.e. Philadelphia, Miami etc.

Reseller is again a Tenant who might or might not use the product by themselves, but they will primarily just act as a reseller and sell the product to other organizations. Resellers can sell it to anyone who requires the product, but again the decision lies with the SaaS product owner, whether to allow the Reseller to sell only for Enterprise or SMB customers.

Note:

The representation of the above categories is logical and CelloSaaS does not mandate these as part of the Business Logic, hence the application developer is free to build upon these features.

CelloSaaS handles these types via the “Tenant Management” page by allowing the user to choose the appropriate selection in the “**Tenant Types**” pull-down.

1.2 How to Enable Reseller

Below are the steps to create a Reseller Tenant:

- Login as a Product admin, Create a Package by selecting all the modules and features in both the Assigned and Assignable modules section under Package Management.
- Since the Reseller might use the product himself and also sell the product to other customer, he requires the Package Management and Tenant Management Modules related privileges to be part of the package owned by Reseller.

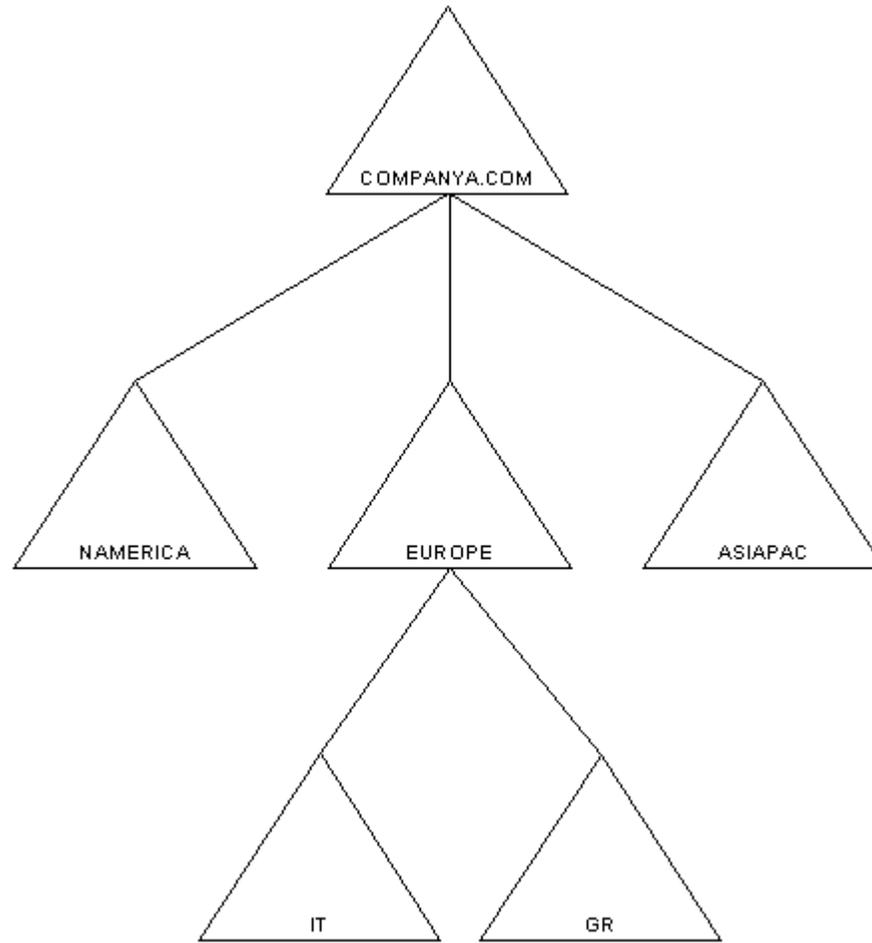
Note:

In case the reseller does not require access to any modules / features, the restriction can be enforced via the Assigned modules / features selection, where as if the child tenant's do not require a module / feature, uncheck the corresponding module / feature in the “Assignable” section while creating the reseller package

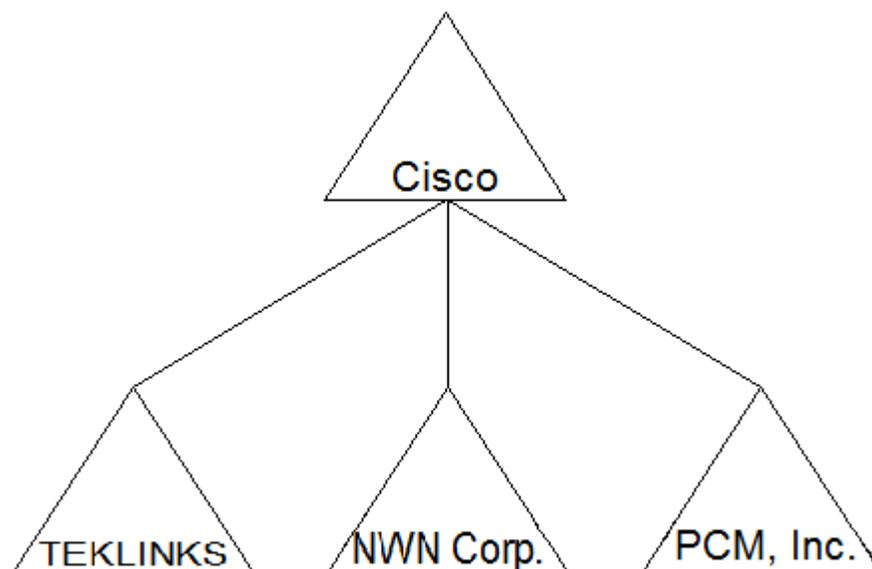
- Login as Reseller Tenant, Create necessary packages to allow the tenants to subscribe the application.
- Update the dispatch details of all the notification templates by navigating through **Notifications** → **Notification Management** → **click Manage Dispatch**
- Update Settings template with appropriate default values, which requires to be managed by this reseller.

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- Create the child tenants by provisioning them with the above created packages.
- A Reseller can either create a “SMB” or “Enterprise” but it may not be logical to create another reseller



The above illustrates an enterprise scenario using Tenant Hierarchy



The above diagram represents the case of a Reseller using Tenant Hierarchy

Note:

Tenant Hierarchy is enabled based on the Subscription and the Privilege held by the Tenant. In order to allow a Tenant to create a sub tenant under a primary tenant, the primary tenant should hold a subscription package which has Assignable modules and features in his possessed package.

Refer **4.1 Create package** under the [Package Management](#) Topic to know the steps to create an assignable package.

1.3 Tenant Activation/Deactivation

When a primary tenant creates a sub tenant, the status of the tenant will be “Inactive” by default as per policy, so it has to be activated by the Primary Tenant Admin using the Approve Child Tenants page[Navigation : **Tenant → Approve Child Tenants**]. But this default behavior can be turned **off** by changing the “Auto Approval for Child Tenant” to True using the Settings Template applied to the Tenant.

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My Account Subscription Tenant Access Control Configuration Business Events Notifications Workflow Reporting Monitor

Tenant Management

+Add

Approved Tenants Unapproved Tenants Tenant Density Graph

Tenant Code String	Tenant Name	Description	Website	ApprovalStatus	Created On
FinanceDiv	FinanceDiv	FinanceDiv	www.finance.initech.com	WaitingForApproval	10/25/2013 5:03 PM

My Account Subscription Tenant Access Control Configuration Business Events Notifications Reporting Monitor

Manage Settings Template

Back Save

Usage
Notifications
Events
Data

Template Details

Template Details	Value
Name*	<input type="text"/>
Type	<input checked="" type="radio"/> Fixed <input type="radio"/> Customized

Attributes*

Please select the below attributes, then provide a value

Select	Attribute Name	Attribute Value
<input type="checkbox"/>	WCF Shared Key	<input type="text"/>
<input type="checkbox"/>	Tenant Authentication Setting	<input type="text"/>
<input type="checkbox"/>	User Password Expiration Days	<input type="text"/>
<input type="checkbox"/>	Application Connection String	<input type="text"/> <small>ConnectionString~Provider</small>
<input type="checkbox"/>	Home Realm	<input type="text"/>
<input type="checkbox"/>	Share Users	<input type="checkbox"/>
<input type="checkbox"/>	Maximum Password Answer Failure Count	<input type="text"/>
<input type="checkbox"/>	Maximum Password Failure Count	<input type="text"/>
<input type="checkbox"/>	User Connection String	<input type="text"/> <small>ConnectionString~Provider</small>
<input type="checkbox"/>	Auto Approval For Tenant Creation	<input type="checkbox"/>
<input type="checkbox"/>	Theme	CelloSkin
<input type="checkbox"/>	Logo	<input type="button" value="Choose File"/> No file chosen <small>Supported Formats include .bmp, .png, .jpg</small>
<input type="checkbox"/>	Date Format String	10/25/2013 8:31:48 AM
<input type="checkbox"/>	Language	Hindi
<input type="checkbox"/>	Disable Product Analytics	<input type="checkbox"/>

Save

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When this setting is changed, the child Tenants will be automatically activated, but then the account has to be activated by the respective administrator. Refer [Activation Process](#) in the Tenant Management Topic.

1.4 Tenant Impersonation

In the context of Tenant Hierarchy, a parent tenant can manage Multiple Sub tenants; i.e. a **Service Administrator** can oversee or administrate a group of Tenants. When the Service admin wants to manage various actions in different Tenants, he need not logout and login as each tenant to do actions instead he can easily impersonate himself and do actions on behalf of other tenants.

CelloSaaS provides impersonation capability with which the **Super Admin/Service Admin** can impersonate and do various activities based on the privilege and accessibility.

1.4.1 Primary Tenant/ Logged In Tenant

The Login screen is common for all the users of the application irrespective of their Roles/Access. It is their individual credentials and their unique company code [in case of tenant's having a unique url, this company code field can be removed] which differentiates one user from another. When the user login, the application identifies the user against the credentials and setup a context with necessary details and this will be maintained until the user logs out.

Based on the privileges given to each user, he/she will be allowed to perform certain actions, but privileges such as Application administration, Membership management, Access Privilege will be given only to administrators.

CelloSaaS



Login

Company Code * company

User Name * admin@company.com

Password * *****

Forgot Password? Register

Login

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CelloSaaS Login Screen

1.4.2 Session Tenant

Super Administrators/ Service Administrators are the special Roles, who are provided with administrative privileges to administrate the entire setup or manage setup of Group of tenants. When these special Administrators logs in, they gets a special Control called as **Session Switcher**, placed next to the **logout** button.

This gives the list of tenants, who are under the current Administrator/Service Administrator control; he can then set the context of the session under which he would to operate. The tenants listed on this page are based on the user's tenant access. Any tenant for whom the user has any role gets listed there.

CelloSaaS

admin@company.com | Change Tenant

My Account Subscription Tenant Access Control Configuration Business Events Notifications Workflow Reporting Monitor

Choose A Session Tenant

Search text... Search

Acme Corp Member since 7 years http://acmecorp.techcello.com belva.majewski@techcello1.com +1-903-766-2159 SMB	Basic Package Start 17 May, 06	Basic Plan \$149 Trial End --	Select
Acme, inc. Member since 6 years http://acmeinc.techcello.com coy.monico@techcello1.com +1-128-215-1908 Enterprise	Basic Package Start 27 Jan, 07	Basic Plan \$149 Trial End --	Select
Allied Biscuit Member since 5 years http://alliedbiscuit.techcello.com conchetta.tebo@techcello1.com +1-248-928-4139	Starter Package Start 18 Feb, 08	Starter Plan \$499 Trial End --	Select

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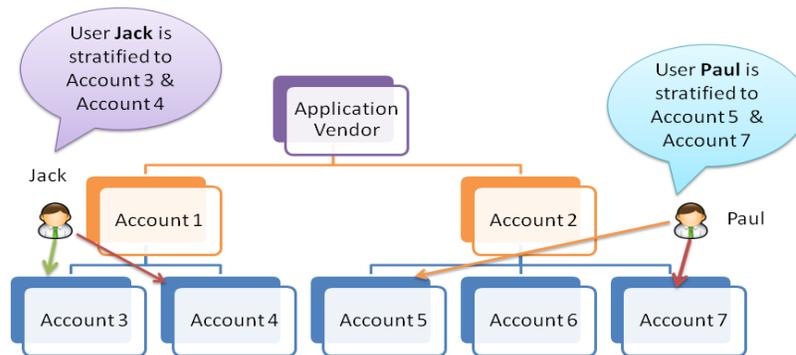
Session Tenant Screen

1.4.3 Tenant Access

Delegated Users can access data as well as perform actions on different tenants based on the following scenarios

- Users assigned roles within the primary tenant
- User assigned a role for the child tenant. Role belongs to the primary tenant
- Users who are assigned role for the child tenants using tenant stratification. Users can perform the actions as per the privileges assigned for the roles in the parent tenant

Tenant Stratification



1.5 How to Create a Service Administrator (On behalf User)

Refer User/Roles Management, to learn how to create Roles and Users.

To entitle a user to manage other tenants, below are the following steps.

Step 1: Navigate to **Access Control** -> **Manage User Details**→ **Click on Manage Roles**→ **Click on Manage Tenant**

The screenshot shows the CelloSaaS interface. The top navigation bar includes: My Account, Subscription, Tenant, Access Control, Configuration, Business Events, Notifications, Workflow, Reporting, and Monitor. The current page is 'Manage User Roles'. The user 'Felix' is selected for the 'Company' tenant. Below this is a table of roles:

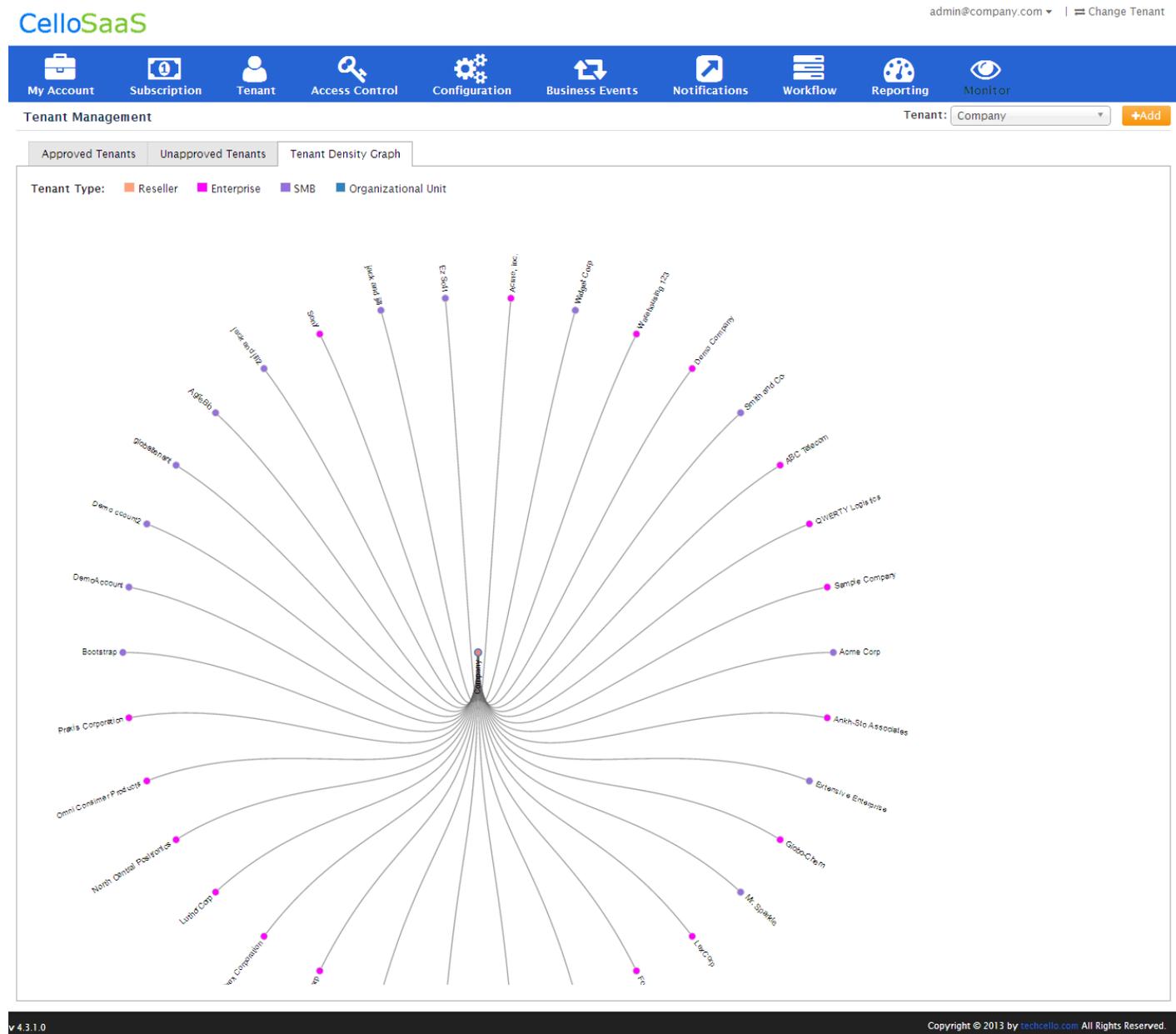
Role Name	Description	Manage Tenants	Remove
SystemMember	SystemMember		

Step2: Check the list of tenants that needs to be set for administrated by the selected user and click on Save.

Step 3: Login as the respective user and click on the Change Tenant menu.

2 Tenant Density Graph

Tenant density graph provides a graphical representation of the entire Tenant Hierarchy. It displays the all the tenants and its sub tenants in a connected nodes.



3 Contact Information

Any problem using this guide (or) using Cello Framework. Please feel free to contact us, we will be happy to assist you in getting started with Cello.

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Phone: +1(609)503-7163

Skype: techcello