

# Novell ICEcore

1.0.3

May1, 2008

ADMINISTRATION GUIDE

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Novell, Inc.  
404 Wyman Street, Suite 500  
Waltham, MA 02451  
U.S.A.  
[www.novell.com](http://www.novell.com)

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# About This Guide

This guide covers the configuration and administration of ICEcore™. In this guide, the term “ICEcore” applies to all versions of the ICEcore software unless otherwise noted.

## Audience

This guide is intended for ICEcore administrators.

## Software and Documentation Version

This manual describes features in ICEcore Version 1.0.3.

## Feedback

We want to hear your comments and suggestions about this guide and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation, or go to [www.novell.com](http://www.novell.com/documentation/feedback.html) (<http://www.novell.com/documentation/feedback.html>) and enter your comments there.

## Additional Documentation

You can find more information in the ICEcore documentation, which is accessible from links within ICEcore:

- ♦ ICEcore Help system
- ♦ *ICEcore Quick Start Guide*
- ♦ *ICEcore User Guide*
- ♦ *ICEcore Installation and Configuration Guide*

The ICEcore online documents can be found within the ICEcore Help system. To access the ICEcore Help system, **log in** (described later in this guide), then click the *Help* link.

In the ICEcore Help system, click the *Getting Started Manuals* link to access copies of the online documents listed above.

## Change History

This table documents changes for recent revisions to this guide:

Guide Revision	Changes
1.0.3	<ul style="list-style-type: none"> <li>♦ Added post installation configuration chapter (originally part of the <i>ICEcore Installation and Configuration Guide</i>).</li> <li>♦ Added section specifically on adding the ICEcore Administration portlet, see <a href="#">Section 2.1.2, “Adding the ICEcore Administration Portlet to Your Home Page,”</a> on page 14.</li> <li>♦ Added section on authenticating users by e-mail address, see <a href="#">Section 2.4.2, “Authenticating Users by E-Mail Address,”</a> on page 17.</li> <li>♦ Edited the ICEcore LDAP authentication, see <a href="#">Section 2.4.4, “Configuring ICEcore for LDAP Authentication,”</a> on page 21.</li> <li>♦ Added section on testing the LDAP authentication and synchronization, see <a href="#">Section 2.4.5, “Testing LDAP Authentication and Synchronization,”</a> on page 23.</li> <li>♦ Added section on adding user internal identifiers in ICEcore, see <a href="#">Section 2.4.7, “Adding a User Internal Identifier in ICEcore,”</a> on page 24.</li> <li>♦ Edited the mail setup section, see <a href="#">Section 2.5, “Mail Setup,”</a> on page 27.</li> <li>♦ Edited mirrored folders section, see <a href="#">Section 2.9, “Configuring Mirrored Folders,”</a> on page 43.</li> <li>♦ Added an overview section on the workflow features, see <a href="#">Section 5.1, “Reviewing the Workflow Features,”</a> on page 89.</li> </ul>

## Documentation Updates

For the most recent version of the *ICEcore Administration Guide* and other documentation, visit the [Novell Teaming Web site \(http://www.novell.com/documentation/team\\_plus\\_conf\)](http://www.novell.com/documentation/team_plus_conf).

## Conventions

This guide uses the following conventions:

A greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path.

A trademark symbol (®, ™, etc.) denotes a Novell trademark. An asterisk (\*) denotes a third-party trademark.

When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a backslash. Users of platforms that require a forward slash, such as Linux\* or UNIX\*, should use forward slashes as required by your software.



# Introduction

# 1

Companies are focused on creating efficient and cost-effective methods that enable them to bring their products or services to the marketplace. Thanks to the Internet, and to video and networking innovations, companies now have many tools at their disposal, and can enhance and streamline their existing business processes.

- ♦ [Section 1.1, “Configuring ICEcore,” on page 9](#)
- ♦ [Section 1.2, “What Is a Workflow Process?,” on page 9](#)
- ♦ [Section 1.3, “Workflow Tasks and Workflow States,” on page 10](#)
- ♦ [Section 1.4, “Custom Entries,” on page 11](#)

## 1.1 Configuring ICEcore

The first section in this guide, [“Configuring ICEcore” on page 13](#), contains information on configuring Novell® ICEcore after you have it installed. See the *ICEcore Installation and Configuration Guide* for installation instruction.

## 1.2 What Is a Workflow Process?

When a business process is defined and put into operation through the use of software and other tools, it becomes a workflow process. The workflow process provides the online forms that participants use. A workflow process can also indicate the reassignment of work from one person to the next.

Well-designed workflow processes identify and integrate the possible outcomes of each task, because different outcomes change the way in which one task transitions to another. When a user makes a decision, the flow of work changes based upon his or her response. In a workflow process, a decision can be made either manually (by selecting a label from a drop-down list) or automatically (such as after ten days of inaction occur). After a decision has been made, ICEcore sends the appropriate notification to the next participant in the workflow. Decisions, information, and a history of the completed work can be stored and later accessed in ICEcore.

Workflow allows you to move work quickly and efficiently throughout the organization. When developing an online workflow process, you should try to represent the associated business process in its fullest detail. To do this, workflow processes usually use a workflow-management system to support the design, implementation, testing, maintenance, and administration of processes.

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**NOTE:** A workflow-management system is a software-based system that allows IT to create and manage the execution of workflows that serve their organization, and that assists participants in completing tasks within the business process.

---

Most workflow management systems provide a common set of tools. These tools allow IT to define the business processes, initiate and control specific tasks, or create rules for determining how specific data is processed and shared.

## 1.3 Workflow Tasks and Workflow States

To track work within a business process, a participant (most often a manager) periodically checks the status of the work. For example, the manager can request that the employees produce status reports using e-mail or the manager can hold weekly status meetings. The purpose of these efforts is to communicate where within the business process the work currently resides. A manager who understands the status of the work can make appropriate decisions about who must perform subsequent tasks.

After a request is submitted for review, the manager or other reviewer is then responsible for deciding whether to approve or deny the request. In the workflow process, the labels (submit, approve, and deny) quickly communicate the state of the work at a given point in the process and who is responsible for the next task.

---

**NOTE:** A state is a label that identifies the result of a completed task and that indicates who is responsible for performing a subsequent task in the process (if any).

---

For example, a user submits a form to HR indicating that he wants to take a vacation day. After the user has finished filling in the Time Off Request form, the state transitions to Submit. Later in the process, after the request is entered into the Time Off database, the state transitions to the Record state.

---

**NOTE:** A transition indicates that work moved from one workflow state to another.

---

One or more discrete actions must be taken with the work in order for its state to change; however, a task can be composed of more than one discrete action. With an online workflow process, some actions can be automated. For example, after a user completes a form and clicks *OK*, ICEcore can automatically transition the work to the Submit state and can notify the manager through e-mail that the Time Off request is ready for review. As another example, the work can transition to Deny, if more than ten days of inaction occur.

Other actions require that a participant use the workflow-management system to manually report the status of work. For example, before a manager begins reviewing the request, he or she can select a label from a drop-down list that indicates that the work is to transition to the Review state. As another example, while in the Review state, the manager can manually select the Deny label.

---

**NOTE:** A state transition occurs when one or more discrete conditions are met. Depending on conditions that are met, a state can potentially transition to one of many subsequent states.

---

States allow participants to track and identify the progress of the work. By seeing the work in the Submit state, the user and HR know that the request has yet to be reviewed by the manager. Based upon the decision that the manager makes in the Review state, the state can transition to one of two different states. If the manager manually denies the request or if ten days of inaction occur, one of the required conditions has been met to make the state transition to the Deny state. When the state transitions to Deny, the actions required are different than if the state had transitioned to Approve.

Workflows, which are based upon business processes, are comprised of tasks that are completed by workflow participants. Tasks are associated with states that identify the status of the work. States transition based upon conditions that are defined in the workflow.

## 1.4 Custom Entries

Custom entries allow you to design custom forms and views for specific types of entries, and allow you to configure your workspaces in Novell® ICEcore to manage the data and interactions for your company and teams in the most effective manner possible. Custom entries (and default entries) can be linked to workflow processes in ICEcore to manage your business processes in a comprehensive manner.

---

**NOTE:** A workflow process is an online representation of a business process. It allows the participants of the workflow to organize, automate, and track all aspects of the business process.

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# Configuring ICEcore

# 2

Before using Novell® ICEcore, you need to perform initial configuration tasks to set up ICEcore so that all default features are operable. The following sections are covered in this section:

- ♦ [Section 2.1, “Logging in as a Liferay Site Manager,” on page 13](#)
- ♦ [Section 2.2, “Initial Logon,” on page 15](#)
- ♦ [Section 2.3, “Adding Your Company Logo,” on page 15](#)
- ♦ [Section 2.4, “Managing Users and LDAP Authentication,” on page 16](#)
- ♦ [Section 2.5, “Mail Setup,” on page 27](#)
- ♦ [Section 2.6, “Adjusting Access Control for the Site,” on page 31](#)
- ♦ [Section 2.7, “Create Your Initial Workspaces,” on page 38](#)
- ♦ [Section 2.8, “Invite Users to the Site,” on page 43](#)
- ♦ [Section 2.9, “Configuring Mirrored Folders,” on page 43](#)
- ♦ [Section 2.10, “Document Support,” on page 45](#)

## 2.1 Logging in as a Liferay Site Manager

You need to log in using an administrator account in order to set up ICEcore for your users.

- ♦ [Section 2.1.1, “Logging in with the Administrator Account;,” on page 13](#)
- ♦ [Section 2.1.2, “Adding the ICEcore Administration Portlet to Your Home Page,” on page 14](#)

### 2.1.1 Logging in with the Administrator Account:

- 1 Type your company’s fully qualified hostname for ICEcore into the browser window and press Enter.

For example,

`http://myhost`

`http://myhost.mycompany.com`

`http://somehost.foo.com:8080`

The *Sign In* page appears.

- 2 In the *Login* field, type:

`admin`

- 3 In the *Password* field, type:

`admin`

- 4 Click *Login*.

The ICEcore Home Page appears. You are now logged in as administrator.

---

**NOTE:** You need to change this password as part of the initial login.

---

The Liferay portal management links are in the upper right corner of the page below the *Welcome Mary Admin!* text. This is the name associated with the default administration account (*administrator*). When the name appears in the upper right corner, you are logged into the system. (You can change the name *Mary Admin* by modifying the user profile for the *administration* account.)

When you begin managing ICEcore, there are only two management levels: site managers (who manage the server machine) and portal managers.

By default, *administrator* is the only member of the Administrators group for the Liferay portal Administrators group. Members of the Administrators group have the right to perform portal management tasks. If you choose, you can add other members to this group, so that they can help manage the portal.

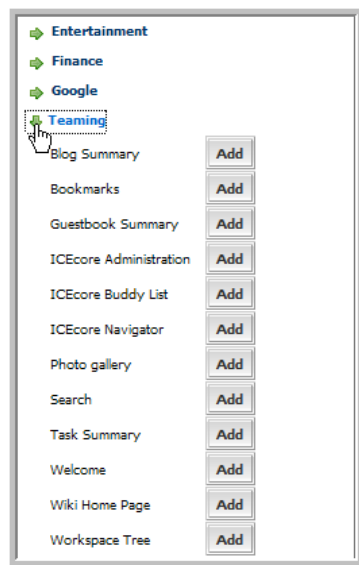
## 2.1.2 Adding the ICEcore Administration Portlet to Your Home Page

The *ICEcore Administration* portlet is designed to provide you with a maximum amount of flexibility when managing resources for your teams.

You access the ICEcore management options via the *ICEcore Administration* portlet.

To Add the *ICEcore Administration* Portlet to Your Home Page:

- 1 Click *Add Content* in the upper right corner.
- 2 In the portlet access frame that appears in the upper left corner, click *ICEcore* to view the available ICEcore portlets that you can add.



- 3 Click the *Add* button next to *ICEcore Administration* to add this portlet to your Home Page.

The *ICEcore Administration* option provides you with access to all the administration tasks controlled by the ICEcore software.

---

**NOTE:** Because ICEcore is embedded within Liferay, a portion of user management is delegated to the Liferay. For example, Liferay is responsible for all user authentications using the *Enterprise Admin* portlet.

---

## 2.2 Initial Logon

After installing ICEcore/Liferay, you need to log in. The ICEcore installation creates one system administrator account and a default format for users. This procedure uses the initial admin login, but is the same procedure that each user uses to login for the first time.

---

**NOTE:** When using LDAP/eDirectory™ as the authentication source, a new user can not login until the e-mail attribute is populated. Liferay only requires a non-null value for this attribute to authenticate the source, so this does not need to be a valid e-mail.

---

- 1 Access your installation with a browser via the following URL:

`http://yourhost.name.here:8080`

- 2 At the login screen, enter your user name: `admin`

- 3 Enter your initial password: `admin`

You are brought to a *Change Password* screen the very first time you login (regular users only see this screen if the admin turns this functionality on for all users under *Password Policies* in the Liferay *Enterprise Admin* portlet.

- 4 Change your password and click *OK*.

This brings up the initial Liferay portal window.

When you change your password (here or in the Liferay portal), the new password is not resynchronized into ICEcore until you relogin. This means WebDAV and web services use the out-dated password until you relogin.

- 5 To add more portlets, click the *Add Content* link in the upper right corner. This brings up a panel of portlets along the left margin:

- ♦ Expand the *ICEcore* section to add more ICEcore features, such as the *ICEcore Administration* portlet.
- ♦ Expand the *Admin* section to add useful Liferay features, such as the *Admin* and *Enterprise Admin* portlets.

The portlets are placed in the narrow column on the left side. To move a portlet to the wider right column, drag the title to the right column and drop it when a blue bar with arrows on each side appears.

## 2.3 Adding Your Company Logo

The ICEcore logo in the upper left corner of each Teaming site page is replaceable.

The ICEcore logo file is `teaming_logo.gif`. By default, it is located in the following directory:  
`/opt/icecore/liferay-portal-tomcat-5.5-jdk5-4.3.0/webapps/ROOT/html/themes/Novell_theme/images`

where *Novell\_theme* represents one of the three Novell theme directories:

- ♦ `Novellblue`

- ♦ Novellgrey
- ♦ Novellwhite

---

**NOTE:** The part of the path before the `webapps` directory might be different on your system depending on where you installed ICEcore.

---

To replace the ICEcore logo with your own logo:

- 1 Create a GIF file for your logo that is approximately the same size as the ICEcore logo.
- 2 Name the GIF file `teaming_logo.gif`.
- 3 Make a backup copy of the original `teaming_logo.gif` file.
- 4 Under in `images` subdirectory of each *Novell\_theme* directory, replace the existing `teaming_logo.gif` file with your company logo `teaming_logo.gif` file.
- 5 Restart ICEcore.

## 2.4 Managing Users and LDAP Authentication

There are two methods of managing users:

- ♦ Basic User Management lets you create and manage individual accounts manually
- ♦ LDAP/eDirectory™ lets you synchronize user account management to a corporate directory

Regardless of which method you choose, it is important to realize that because ICEcore is embedded within Liferay, a portion of user management is delegated to the Liferay. For example, Liferay is responsible for all user authentications.

The section includes the following topics:

- ♦ [Section 2.4.1, “Basic User Management,” on page 16](#)
- ♦ [Section 2.4.2, “Authenticating Users by E-Mail Address,” on page 17](#)
- ♦ [Section 2.4.3, “Configuring Liferay for LDAP Authentication,” on page 18](#)
- ♦ [Section 2.4.4, “Configuring ICEcore for LDAP Authentication,” on page 21](#)
- ♦ [Section 2.4.5, “Testing LDAP Authentication and Synchronization,” on page 23](#)
- ♦ [Section 2.4.6, “Secure LDAP/eDirectory Setup,” on page 23](#)
- ♦ [Section 2.4.7, “Adding a User Internal Identifier in ICEcore,” on page 24](#)

### 2.4.1 Basic User Management

This capability comes “out of the box” with the product. No additional setup is required.

- 1 Using the Liferay *Enterprise Admin* portlet, click the *Users* tab.

Liferay has two portlets, *Enterprise Admin* and *Admin*. Both have *Users* tabs, but they do very different things. Make sure you are using the correct portlet. In the *Enterprise Admin* portlet, the *Users* tab brings up a list of current Liferay accounts. You can refer to the [Liferay documentation \(http://www.liferay.com/web/guest/documentation/4\\_3\)](http://www.liferay.com/web/guest/documentation/4_3) for more advanced management.

- 2 Click *Add*.



- 3 Fill in the *First Name* and *Last Name* fields, assign a *User ID*, specify the e-mail address, then click *Save*.

---

**NOTE:** Do not use any forbidden characters (`/\*?"<>;|`) in a user's name.

---

- 4 Liferay shows an extended form.
- 5 Click *Save*.
- 6 Click the *Password* tab, type in the password, then click *Save*.
- 7 Repeat these steps to add additional users.

The account is now ready for use, but not fully created. The administrator and other users cannot see the new user until after the user logs in for the first time. After the new user logs in, ICEcore creates his or her user workspace, including a blog, calendar, and file area.

## 2.4.2 Authenticating Users by E-Mail Address

To use this option:

- Each e-mail address must be unique (if multiple users share the same e-mail account authentication becomes problematic).
- If you are using LDAP synchronization, you must change the *Search Filter*. For example, from `cn=@screen_name@` to `mail=@email_address@`. For more information, see [“Configuring Liferay for LDAP Authentication” on page 18](#).
- You must still map a screen name value to the appropriate Liferay attribute. ICEcore requires that a unique screen name still exists for each user. Web services and WebDAV authentications only support login by username.

For more information on these settings, see [Configuring Liferay for LDAP Authentication](#).

To enable this feature, select *By Email Address* in the *How do users authenticate?* drop-down list on the *Enterprise Admin > Settings > Authentication > General* screen.

**Figure 2-1** Enterprise Admin Authentication

The screenshot shows the 'Enterprise Admin' interface. At the top, there is a navigation bar with tabs: Users, Organizations, Locations, User Groups, Roles, Password Policies, Settings (selected), Monitoring, and Plugins. Below this is a sub-navigation bar with tabs: General, Authentication (selected), Default User Associations, Reserved Screen Names, Mail Host Names, and Email Notifications. Under the 'Authentication' tab, there are sub-tabs: General, LDAP, CAS, and OpenID. The 'General' sub-tab is active. It contains the following settings:

- 'How do users authenticate?' is a dropdown menu currently set to 'By Screen Name'. A dropdown menu is open showing options: 'By Email Address' (highlighted), 'By Screen Name', and 'By User ID'.
- 'Allow users to automatically login?' is a checkbox.
- 'Allow users to request forgotten passwords?' is a checkbox.
- 'Allow strangers to create accounts?' is a checkbox.

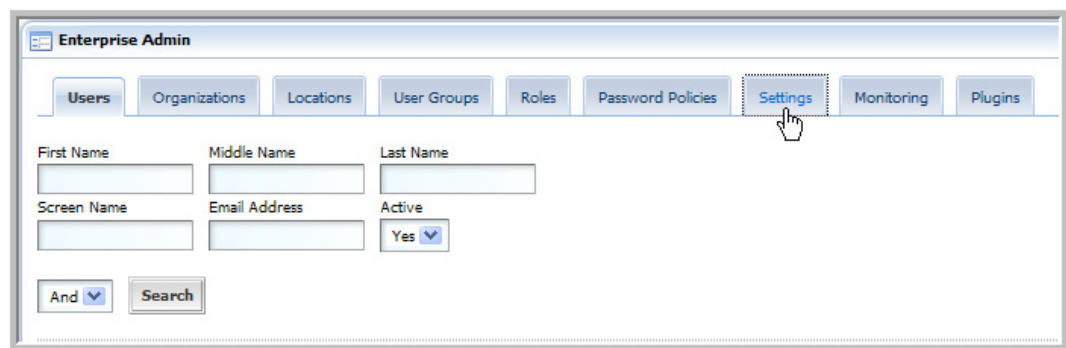
A 'Save' button is located at the bottom left of the form.

## 2.4.3 Configuring Liferay for LDAP Authentication

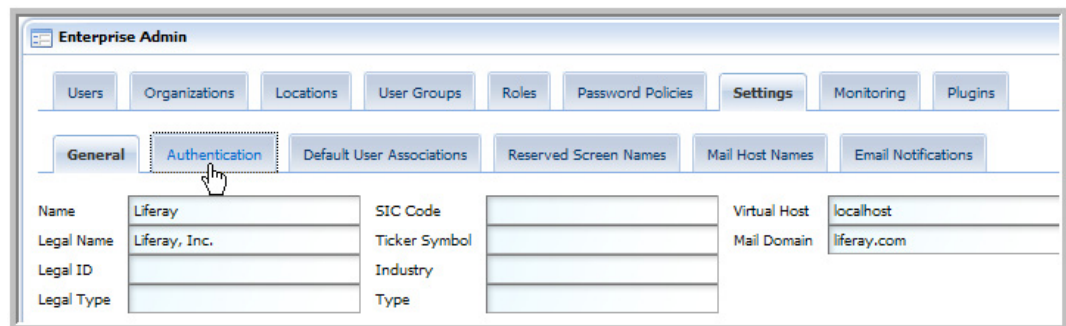
If you want to use a corporate directory as the master reference for user accounts, you need to configure both Liferay and ICEcore in a similar manner. The ICEcore LDAP configuration pages are designed to look and work in a similar fashion to Liferay, easing this task significantly. You can refer to the [Liferay documentation \(http://www.liferay.com/web/guest/documentation/4\\_3\)](http://www.liferay.com/web/guest/documentation/4_3) for more detailed information.

**WARNING:** If you use LDAP, you should require SSL only connections to ICEcore to prevent the possibility of any outside software being set up to packet grab http posts to the ICEcore server and retrieving a user's login and password credentials. See “[Secure LDAP/eDirectory Setup](#)” on [page 23](#).

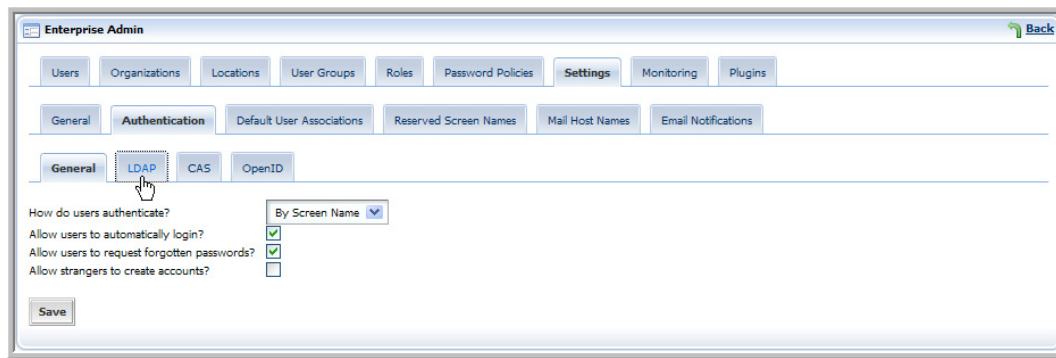
- 1 Using the Liferay *Enterprise Admin* portlet, click the *Settings* tab (you might need to click the >> tab to see the *Settings* tab).



- 2 Click the *Authentication* tab.



- 3 Click the *LDAP* tab.



- 4 Under *Connection Settings*, fill out the form with the values needed to map to your corporate directory:

4a Select *Enabled*.

Enabled	<input checked="" type="checkbox"/>
Required	<input type="checkbox"/>
NTLM Enabled	<input type="checkbox"/>

- 4b In the *Base Provider URL* field, specify the IP address of your LDAP server, followed by the port number it uses (typically, 389 for non-secure connections or 636 for secure SSL connections).

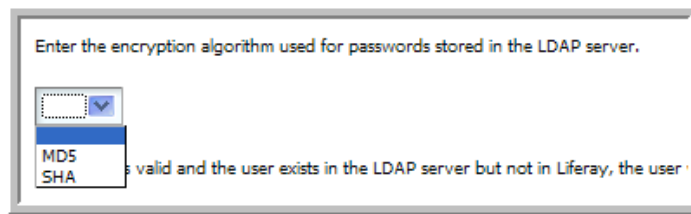
Base Provider URL	ldap://localhost:389
Base DN	cd=example,dc=com
Principal	cn=admin,ou=system
Credentials	*****

- 4c In the *Base DN* field, specify the eDirectory context where ICEcore users' User objects are located (for example, ou=users,o=corporate).
- 4d In the *Principle* field, specify the full context of your eDirectory Admin User object (for example, cn=admin, ou=users, o=corporate).
- 4e In the *Credentials* field, specify the password of your eDirectory Admin user.
- 4f For the search filter, use `uid=@screen_name@` or `cn=@screen_name@`, depending on your site conventions. This should be the same LDAP attribute value that you configure ICEcore with to identify the user. For more information, see [“Configuring ICEcore for LDAP Authentication” on page 21](#).

Enter the search filter that will be used to test the validity of a user. The tokens @company\_id@, @email\_address@, and @user\_id@ are replaced at runtime with the correct values.

(cn=@screen\_name@)

- 4g** If your LDAP is set up for password comparison, select the algorithm to use for LDAP password encryption from the *Encryption Algorithm* drop-down list (a blank value means no encryption, MD5 and SHA specify two different algorithms).

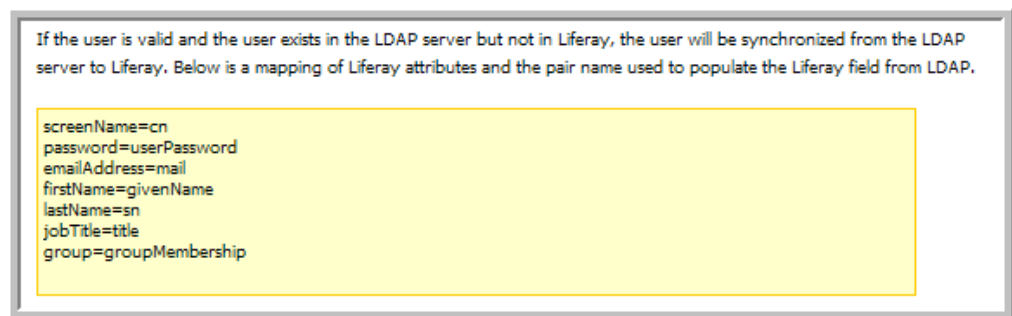


Enter the encryption algorithm used for passwords stored in the LDAP server.

The dropdown menu is open, showing three options: (blank), MD5, and SHA. The (blank) option is currently selected.

- 4h** Map the specific LDAP values you want to use for each user to the appropriate Liferay attributes.

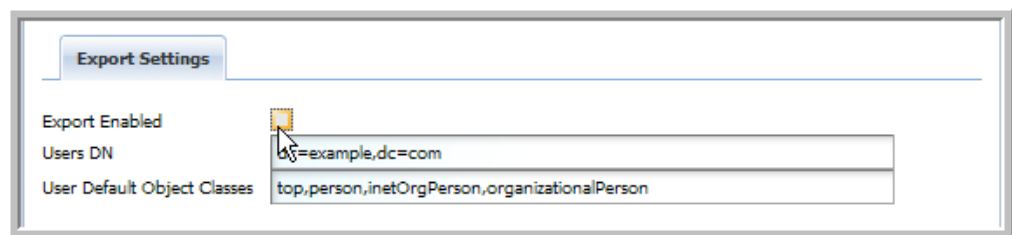
When using LDAP/eDirectory™ as the authentication source, a new user can not login until the e-mail attribute is populated. Liferay only requires a non-null value for this attribute to authenticate the source, so this does not need to be a valid e-mail.



If the user is valid and the user exists in the LDAP server but not in Liferay, the user will be synchronized from the LDAP server to Liferay. Below is a mapping of Liferay attributes and the pair name used to populate the Liferay field from LDAP.

```
screenName=cn
password=userPassword
emailAddress=mail
firstName=givenName
lastName=surname
jobTitle=title
group=groupMembership
```

- 4i** Under *Export Settings*, we recommend deselecting the *Export Enabled* option.



The **Export Settings** tab is selected. The **Export Enabled** checkbox is unchecked. The **Users DN** field contains `dc=example,dc=com`. The **User Default Object Classes** field contains `top,person,inetOrgPerson,organizationalPerson`.

- 5** Click *Save*.

The LDAP connection is tested and an initial test connection to the LDAP server is attempted. A successful connection or failure is reported:

*Your request processed successfully.*

or

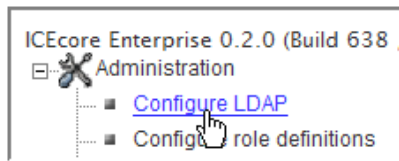
*You have entered invalid data. Please try again. Failed to bind to the LDAP server with given values.*

To connect to a secure LDAP server, you need to import the server's certificate into ICEcore's keystore. See [“Secure LDAP/eDirectory Setup” on page 23](#).

## 2.4.4 Configuring ICEcore for LDAP Authentication

The ICEcore LDAP Configuration form is similar to the Liferay form, but includes additional information on scheduling synchronization of all users and, optionally, groups. LDAP synchronization is available in the ICEcore Enterprise Version only. For the Open Source version, use the *ICEcore Administration > Import Profiles* function.

- 1 In the *ICEcore Administration* portlet, click *Configure LDAP*.



- 2 With *Enable Schedule* selected, click *Schedule*, then set the schedule as needed for LDAP synchronization for your ICEcore site.
- 3 Click *Connection*.

A screenshot of the 'Configure LDAP Synchronization' form. It has a title bar and two buttons: 'Apply' and 'Close'. There are two checkboxes: 'Enable schedule' (checked) and 'Run immediately' (unchecked). Below these is a 'Schedule' section with a 'Connection' subsection. The 'Connection' section has a text box for 'URL' containing 'ldap://localhost:389/ou=Users,o=Example', a 'Principal' field with 'cn=admin,o=novell', a 'Credentials' field with '\*\*\*\*\*', and a 'Search DN' field. A note explains the LDAP URL format: 'The LDAP URL format is ldap://host:port/searchdn, where searchdn specifies the initial search context for users and is optional. For example: ldap://localhost:389/ou=Users,o=Example'. Another note says 'Search DN for locating groups, if different from the LDAP URL above (e.g., dc=groups,o=Example)'.

- 4 In the *URL* field, specify the IP address or DNS hostname of your LDAP server, followed by the port number it uses (typically, 389 for non-secure connections or 636 for secure SSL connections).
- 5 After the port number, type a slash (/), then specify the eDirectory context where ICEcore users' User objects are located (for example, ou=users,o=corporate).

---

**IMPORTANT:** Be sure to specify the eDirectory context in the *URL* field, not in the *Search DN* field.

---

- 6 In the *Principal* field, specify the full context of your eDirectory Admin User object (for example, cn=admin,ou=users,o=corporate).
- 7 In the *Credentials* field, specify the password of your eDirectory Admin user.
- 8 Scroll down to the Users section.

**Users**

LDAP attribute that identifies the user.

cn

In the box below, map the internal identifiers to the LDAP attribute names of the user record. Use the following syntax: internalID=ldapAttName

- lastName=sn
- lastName=surname
- firstName=gn
- description=description
- emailAddress=mail
- firstName=givenName
- phoneNumber=telephoneNumber

☒ Synchronize user profiles

☒ Register LDAP user profiles automatically

☐ Delete users that are not in LDAP

☐ When deleting users, delete associated user workspaces and content

**Groups**

☐ Register LDAP group profiles automatically

☐ Synchronize group membership

☐ Delete local groups that are not in LDAP

Apply Close

- 9 Set the *LDAP Attribute* field to `cn`. The LDAP attribute that identifies the user, for example: `uid` or `cn`.

---

**NOTE:** For the LDAP attribute that identifies the user, `cn` might be a better choice than `uid` for many sites. This should be the same attribute value you used for the search filter in the Liferay LDAP configuration. For more information, see [Section 2.4.3, “Configuring Liferay for LDAP Authentication,” on page 18](#).

---

- 10 Map the LDAP attribute names of the user record to the ICEcore internal identifiers. The syntax is: `ICEcoreId=ldapAttName`, for example:

- ♦ `lastName=sn`
- ♦ `name=uid`
- ♦ `ICEcore:lastName, firstName, name, description, email, Address, phone.`

If you need to add additional internal identifiers for your users in ICEcore, see [“Adding a User Internal Identifier in ICEcore” on page 24](#).

- 11 Select *Synchronize User Profiles* (recommended).
- 12 Select *Register LDAP User Profiles Automatically* (recommended).  
Do not select *Delete Users That Are Not in LDAP* or *Delete Associated User Workspaces and Content*.
- 13 If you want to synchronize groups:
  - 13a Select *Register LDAP Group Profiles Automatically* (recommended).
  - 13b Select *Synchronize Group Membership* (recommended).

Do not select *Delete Local Groups That Are Not in LDAP*.

- 14 Click *Apply* to save your Novell Teaming LDAP synchronization settings.

This returns you to the top of the Configure LDAP Synchronization page.

- 15 Select *Run Immediately*, then click *Apply*.

---

**NOTE:** Users do not show up in the user list until after they have logged in for the first time.

---

## 2.4.5 Testing LDAP Authentication and Synchronization

If you complete the instructions in “[Configuring Liferay for LDAP Authentication](#)” on page 18 and “[Configuring ICEcore for LDAP Authentication](#)” on page 21, and you receive no error message in your browser, LDAP authentication should be configured and occurring on the schedule you specified during configuration. You cannot see the ICEcore accounts on the Users tab of the Liferay *Enterprise Admin* portlet until each user logs into the ICEcore site, but you can see that the eDirectory accounts are available to the Teaming site.

As a test:

- 1 Display the ICEcore home page.
- 2 Place your cursor in the *Find People* field, then type the first letter of an eDirectory username. If eDirectory synchronization is taking place, a drop-down list displays eDirectory usernames that start with the letter you typed.
- 3 Sign in to the ICEcore site as yourself, using your eDirectory username and password. After you log in, your account and your personal workspace become visible to other ICEcore users.

Changes to user information that are made in eDirectory are automatically synchronized to users’ Teaming accounts.

To verify that synchronization is taking place:

- 1 In ConsoleOne, make a change to the information in your eDirectory user account.
- 2 Run LDAP synchronization immediately from the *ICEcore Administration* portlet.
- 3 Check your ICEcore account to see that the information has been synchronized.

---

**NOTE:** Synchronization of user information from ICEcore back into eDirectory is not available at the present time.

---

## 2.4.6 Secure LDAP/eDirectory Setup

To connect to a secure LDAP server, you need to import the server’s certificate into ICEcore’s keystore. If the LDAP server is `ldap.company.com`, and it’s running on the usual LDAP port (636), then you can follow these steps in the command line interface:

---

**NOTE:** An administrator who understands the openssl tool should perform this procedure.

---

This technique only works for certificates from an external certificate signing authority. If the LDAP server is using a self-signed certificate, you also need to get the certificate for this internal CA and

add it to the `cacerts` file on the ICEcore machine. The code at [http://blogs.sun.com/andreas/entry/no\\_more\\_unable\\_to\\_find](http://blogs.sun.com/andreas/entry/no_more_unable_to_find) to get the other certificate appears to be a good example.

- 1 Make sure you have `openssl` available.
- 2 Enter `openssl s_client -connect ldap.company.com:636`
- 3 Copy everything from the ‘-----BEGIN CERTIFICATE-----’ to the ‘-----END CERTIFICATE-----’ lines (inclusive) into a file, such as `cert.ldap` (the name does not matter).
- 4 Change directories to the `java/bin` directory, then enter (this uses the default directory path `/opt/icecore/`):  

```
keytool -import -alias ldap.company.com -keystore /opt/icecore/liferay-portal-tomcat-5.5-jdk5-4.3.0/conf/.keystore -file cert.ldap
```

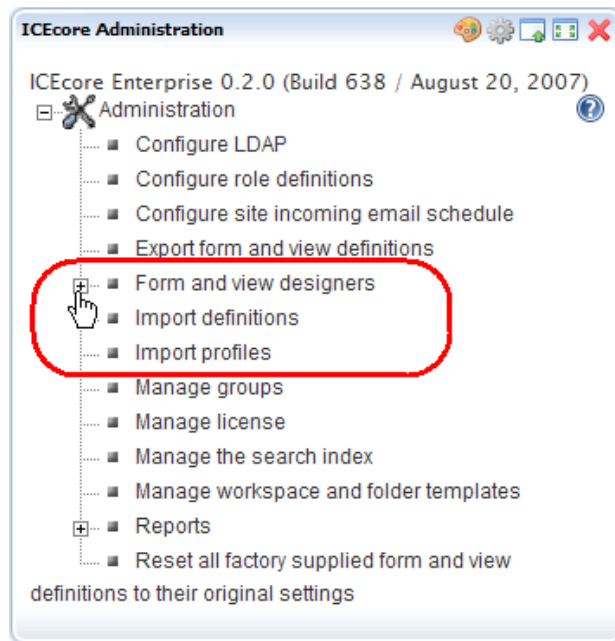
In order for this command to succeed, the `java/bin` directory must be in the `PATH` variable, or the command must be launched from the `java/bin` directory, for example:  
`/usr/java/jdk1.5.0_12/bin/keytool -import -alias ldap.company.com -keystore /sitescape-team-0.1.0/liferay-portal-tomcat-5.5-jdk5-4.3.0/conf/.keystore -file cert.ldap`
- 5 If prompted for a password, the keystore’s default password is: `changeit`
- 6 Restart Tomcat.
- 7 Make sure you use `ldaps://ldap.company.com:636` as the LDAP URL, rather than the default `ldap://ldap.company.com:389` (note protocol and port number changes).

## 2.4.7 Adding a User Internal Identifier in ICEcore

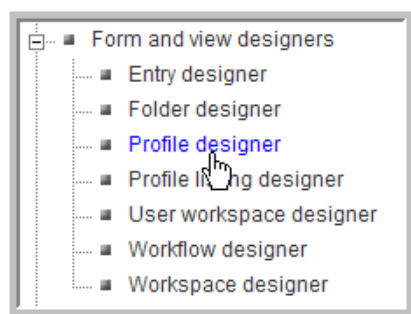
Use the *Profile designer* to add a new user element (internal identifier) in ICEcore.

- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, See [“Adding the ICEcore Administration Portlet to Your Home Page” on page 14.](#)





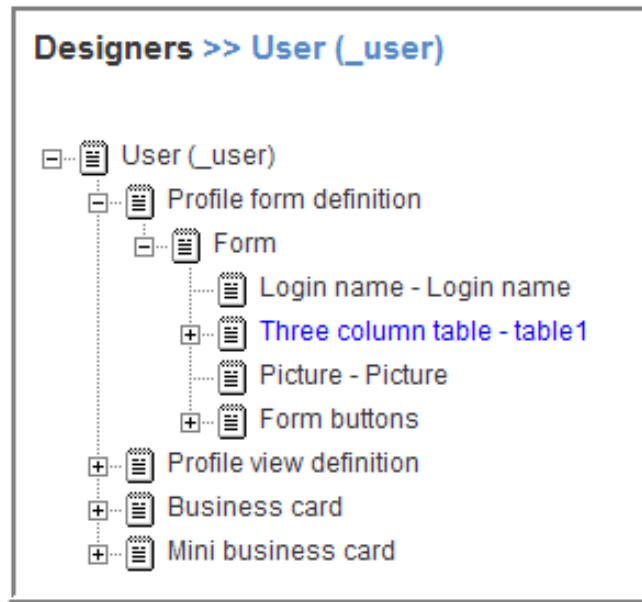
2 Click *Profile designer*.



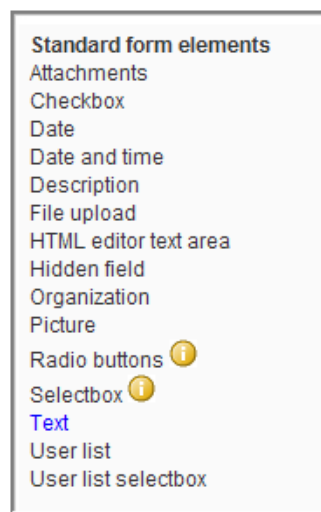
3 Expand *Profile view* and click *User*.



4 Expand the following items in the designer tree: *User* > *Profile form definition* > *Form*, then click *Three column table - table1*.



- 5 In the dialog on the right, click *Add*.
- 6 Under *Standard form elements* click *Text*.



- 7 In the dialog that appears, specify the user friendly name you want to use for this element in *Caption* field, and specify the database name in the *Data name* field (used cellphone for this example), then click *OK*. See [Chapter 6, “The Profile Designer,” on page 105](#) for adding an element to your business card.

- 8 Once it is added, in the top right corner click *Close*.
  - 9 In the *ICEcore Administration* portlet, click *Configure LDAP* and map the new element (internal identifier, `cellphone`) to the appropriate LDAP attribute for this new user information.
  - 10 Select *Run immediately*, then click *Apply*.
- For more information, see [“Configuring ICEcore for LDAP Authentication” on page 21](#).

## 2.5 Mail Setup

ICEcore e-mail integration is divided into two primary functions:

- ♦ Notification: E-mail messages generated by ICEcore to inform people of events (such as new entries or changes) occurring within a ICEcore folder.
- ♦ Posting: The processing of e-mail messages sent to ICEcore with the intent of having the e-mail content added to a particular folder as a new entry or reply.

---

**NOTE:** E-mail notification and postings only work with ICEcore folders. You cannot associate e-mail settings for ICEcore workspaces.

---

- ♦ [Section 2.5.1, “System E-Mail Configuration,” on page 27](#)
- ♦ [Section 2.5.2, “Using Aliases E-Mail Addresses for Posting,” on page 28](#)
- ♦ [Section 2.5.3, “Using Real E-Mail Accounts for Posting,” on page 28](#)
- ♦ [Section 2.5.4, “Setting Up a Schedule for Incoming Mail,” on page 28](#)
- ♦ [Section 2.5.5, “Setting up a Folder for Posting,” on page 29](#)
- ♦ [Section 2.5.6, “Establishing a Notification Schedule for a Folder,” on page 30](#)

### 2.5.1 System E-Mail Configuration

As part of installing and configuring ICEcore, the system administrator must supply information so that ICEcore can access the mail system (e-mail integration is not required). You can configure the level of ICEcore e-mail integration.

When you run the installer there are screens for both Outbound and Inbound e-mail communication. Outbound configuration requires the basic information for generating SMTP mail messages: server, port, and optional authentication information.

The *Username* field for the Outbound configuration is the address used for any e-mail notifications generated by the system. This name is also used for authenticated access to the SMTP server. To support e-mail sent by users, either the ICEcore server or the authenticated user must be authorized to use different *From* addresses.

ICEcore posting uses real accounts or alias e-mail addresses in your folders, according to how you configure your Inbound e-mail settings in the installer. To use alias e-mail addresses, select the *Use aliases* option in the *Inbound email configuration* screen of the installer.

## 2.5.2 Using Aliases E-Mail Addresses for Posting

When you use alias e-mail addresses for posting, the system accesses a single e-mail account (sometimes referred to as the “posting account”). You must enter an account name (might not resemble an e-mail address) and password in the *Username* and *Password* fields in the installer’s *Inbound email configuration* screen. Multiple alias e-mail addresses can be mapped to this account and ICEcore periodically reads e-mail sent to this account and forwards the messages to individual folders according to the alias e-mail addresses assigned to the folders. Each folder needs a unique alias for the ICEcore posting feature to work correctly.

Create the posting account using your normal e-mail system management tools. You can configure the posting account to use either POP3 or IMAP. ICEcore needs a host, port, e-mail account ID, and password configured in the installer for the posting feature to work.

## 2.5.3 Using Real E-Mail Accounts for Posting

When you use real accounts for each folder you want to post in, you need to create multiple posting accounts by using your normal e-mail system management tools. You can leave the *Username* and *Password* fields in the installer’s *Inbound email configuration* screen blank (they are not used if you enter any information in these fields when not using alias e-mail addresses). You can configure the posting accounts to use either POP3 or IMAP. ICEcore needs a host, and port configured in the installer for the posting feature to work. An e-mail account ID and password are added to each folder’s configuration for posting with real e-mail accounts. You must use a unique posting e-mail account for each folder if you want the ICEcore posting feature to work correctly.

## 2.5.4 Setting Up a Schedule for Incoming Mail

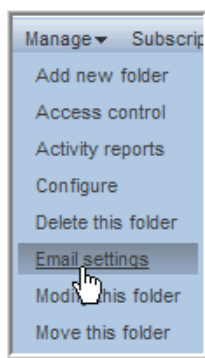
- 1 In the *ICEcore Administration* portlet, click the *Configure site incoming email schedule* link.
- 2 Select the *Enable incoming mail* option.
- 3 Select the type of schedule you want to use for checking the posting e-mail accounts. You can configure the schedule for a specific time of the day or a regular frequency.
- 4 Click *Apply* to save your changes.

The right side of the setup page lists the folders and their e-mail addresses or accounts. You set up the e-mail address to folder mapping within the folders themselves (see [“Setting up a Folder for Posting”](#) on page 29).

## 2.5.5 Setting up a Folder for Posting

If you want to enable posting for a particular folder, you need to map a particular alias e-mail address or account to the folder. When this is done, e-mail sent to the mapped address or account is “read” by the folder and turned into entries or replies.

1. In ICEcore, navigate to the folder where you want to post e-mail and select the *Manage > Email settings* menu item.



2. In the *Receive email from this address (incoming):* field, type in the alias e-mail address if you are using aliases, or type in the e-mail account name (might not resemble an e-mail address) if you are using real accounts for each folder. See [“Using Aliases E-Mail Addresses for Posting”](#) on page 28 and [“Using Real E-Mail Accounts for Posting”](#) on page 28.
3. If you are using real e-mail accounts, specify the password for this e-mail account in the *Password* field. If you are using alias e-mail addresses leave this field blank.

Receive email from this address (incoming):

adminfolder@mycompany.com

Password

\*\*\*\*\*

[Incoming email is disabled. Contact your site administrator.]

4. Click *Apply* to save the e-mail account or alias address.

You can optionally set up the notification schedule for this folder at the same time (see “[Establishing a Notification Schedule for a Folder](#)” on page 30).

## 2.5.6 Establishing a Notification Schedule for a Folder

You can configure each folder to send e-mail messages highlighting activity within the folder.

- 1 In ICEcore, navigate to the folder where you want to post e-mail and select the Manage > *Email settings* menu item.
- 2 Select the *Enable outgoing email* option.
- 3 Select the type of schedule you want for notification. You can configure the schedule for a specific time of the day or a regular frequency.

Notification schedule

☒ Enable outgoing email ⓘ

☒ Every day

☐ Weekly (on the days selected below)

☐ ☐ ☐ ☐ ☐ ☐ ☐

Sun Mon Tue Wed Thu Fri Sat

☒ At time 12 : 00 GMT

☐ Repeat every 0.25 hours

Apply Close

- 4 Specify who is to receive the e-mail. This can be a combination of users, groups, and arbitrary e-mail addresses.

**Send email notifications (outgoing)**

Users/groups receiving notifications ⓘ

Add email addresses (separate multiple addresses with commas)

☐ **Team members**

**Users**  Find people

- John Waters ✕
- Jamaal Evans ✕
- Stephen McCauley ✕

**Groups**  Find groups

- admin ✕

5 Click *Apply* to save the schedule.

## 2.6 Adjusting Access Control for the Site

One of your first tasks as a site manager is to set the access roles to control how different users can view and participate in the site workspaces according to what access role they are assigned. All Access Roles are assigned to users in individual workspaces or folders, except for the Site Administration access role, which grants access to the whole site. There are specific Role Definitions that you can edit to accomplish this.

- ♦ [Section 2.6.1, “Default Role Definitions,” on page 31](#)
- ♦ [Section 2.6.2, “Changing a Default Role Definition,” on page 32](#)
- ♦ [Section 2.6.3, “Editing Default Team Workspace Access Rights,” on page 34](#)

Key Ideas to Keep in Mind:

- ♦ Understand the default access control settings and the philosophy behind them (quick team formation, open communications, etc.)
- ♦ Determine the values and needs of your organization and adjust the access control settings accordingly
- ♦ The best way to delegate administrative tasks is to create groups and use the access-control tools to delegate folder and workspace administration accordingly

### 2.6.1 Default Role Definitions

The following are the default Role Definitions, which should be more than enough to configure your site, although your site administrator can add new Role Definitions if required.

- ♦ **Workspace and Folder Administrator**  
Assigns every access right, but *Site Administration*, to users for the specific workspaces and folders that they administer.
- ♦ **Participant**

Assigns the following default access rights to users for any workspaces or folders in which they are participants:

- ♦ Add Comments
- ♦ Create Entries
- ♦ Delete His or Her Own Entries
- ♦ Modify His or Her Own Entries
- ♦ Read Entries
- ♦ Site Administrator

Has every access right. These rights apply to every workspace and folder.

- ♦ Team Member

Assigns the following default access rights to users for any workspaces or folders in which they are team members:

- ♦ Add Comments
- ♦ Add Folders
- ♦ Add Workspaces
- ♦ Create Entries
- ♦ Delete Entries
- ♦ Delete His or Her Own Entries
- ♦ Generate Reports
- ♦ Manage Community Tags
- ♦ Modify Entries
- ♦ Modify His or Her Own Entries
- ♦ Read Entries

- ♦ Visitor

Assigns the following default access rights to users for workspaces or folders in which they are visitors:

- ♦ Add Comments
- ♦ Read Entries
- ♦ Workspace Creator

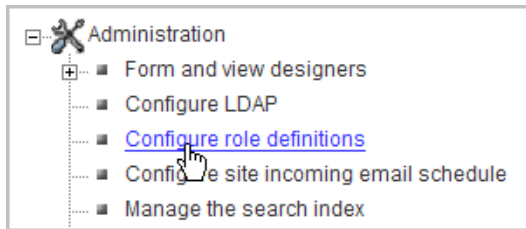
This Role Definition is a special definition assigned to all users at the Top Team Workspace to give every user the right to create a new Team Workspace. The Site Administrator can edit the Top Team Workspace access rights so that only specific users can add Team Workspaces. For more information, see [“Editing Default Team Workspace Access Rights” on page 34](#).

## 2.6.2 Changing a Default Role Definition

For example, you might choose to prevent visitors from adding comments in the site.

- 1 In the *ICEcore Administration* portlet, click *Configure Role Definitions*.

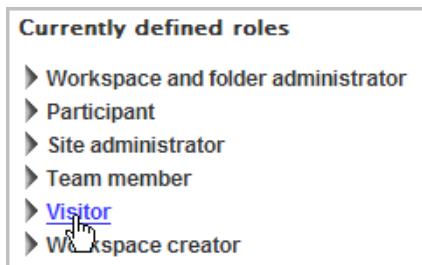




The *Configure Roles* page appears.



2 Click *Visitor*.



3 Under *Visitor*, deselect the *Add Comments* option, and then click *Apply*.

▼ Visitor

- ☒ Add comments
- ☐ Add folders
- ☐ Add workspaces
- ☐ Change access control
- ☐ Create entries
- ☐ Delete entries
- ☐ Delete his or her own entries
- ☐ Design entries
- ☐ Design workflows
- ☐ Generate reports
- ☐ Manage community tags
- ☐ Modify entries
- ☐ Modify his or her own entries
- ☐ Modify, move, delete or re-index folders and workspaces
- ☒ Read entries
- ☐ Site administration

Apply

4 Click *Close* to return to your Home Page.

Visitors to your site can now view entries, but can no longer add comments.

### 2.6.3 Editing Default Team Workspace Access Rights

Every workspace and folder has its own access rights, created through the assignment of Role Definitions to groups and individuals for a workspace or folder. When you create a new workspace, it starts off with the default access rights according to the type of workspace you created: Global, Personal, or Team.

---

**NOTE:** A personal workspace is created when a user signs into ICEcore for the first time.

---

The Site Administrator can edit these default settings; for example, you might want to edit the Top Team Workspace access rights so that only specific users or groups can add Team Workspaces.

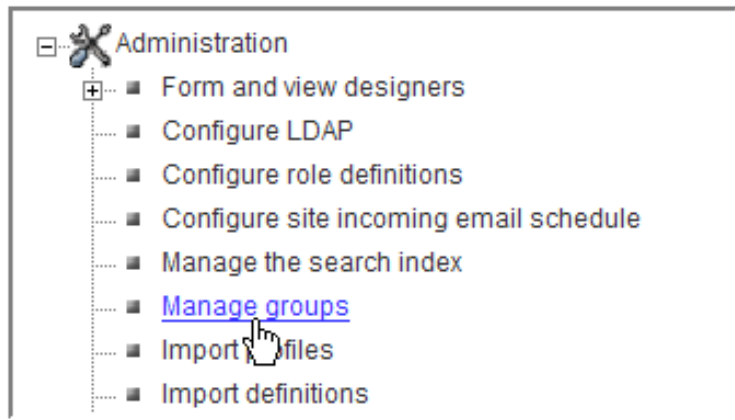
First you want to create a *Team Creator* group to be in charge of Team Workspace creation, and then you want to remove the *Workspace Creator* Role Definition from *All Users* and assign it to the *Team Creator* group in the Top Team Workspace access rights. The site administrator can add new users to the *Team Creator* group at any time.

To do this, perform the following tasks:

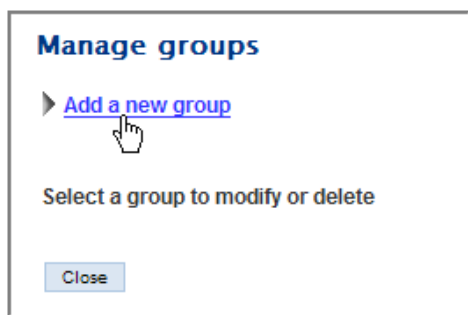
- ♦ “Creating the Team Creator Group” on page 34
- ♦ “Granting the Team Creator Group Sole Team Workspace Creation Rights” on page 36

#### Creating the Team Creator Group

1 In the *ICEcore Administration* portlet, click *Manage Groups*.



- 2 In the *Manage Groups* window, click *Add a New Group*.

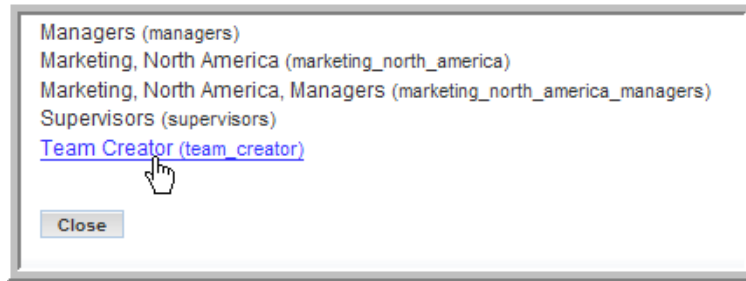


- 3 Specify the new group's name, title, description, and then click *Add*.

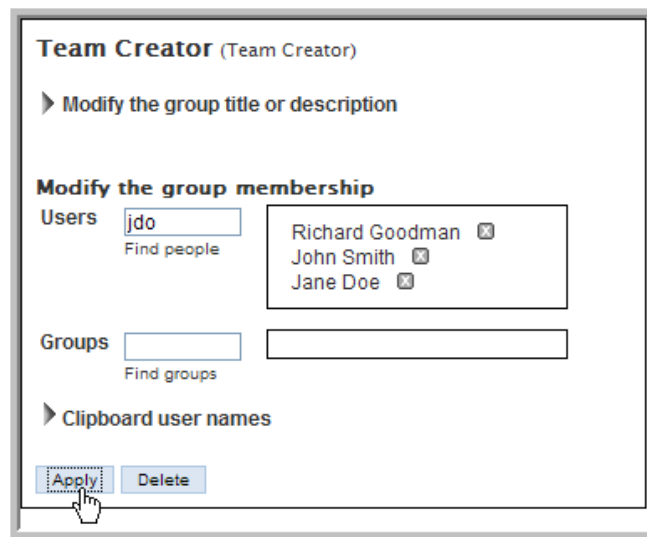
A screenshot of the 'Manage groups' form. It has a title bar 'Manage groups' and a sub-header 'Add a new group' with a dropdown arrow. Below this are three input fields: 'Group name' (with a yellow information icon) containing 'team\_creator', 'Group title' containing 'Team Creator', and 'Group Description' containing 'Group for Creating Team Workspaces'. At the bottom left is an 'Add' button with a mouse cursor hovering over it.

The new group appears on the page.

- 4 Under *Select a Group to Modify or Delete*, click the *Team Creator (Team Creator)* group.



- 5 Add users to the group, then click *Apply*.

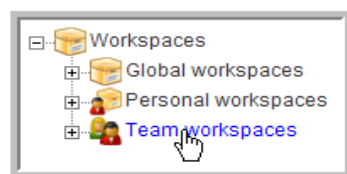


- 6 Click *Close*.

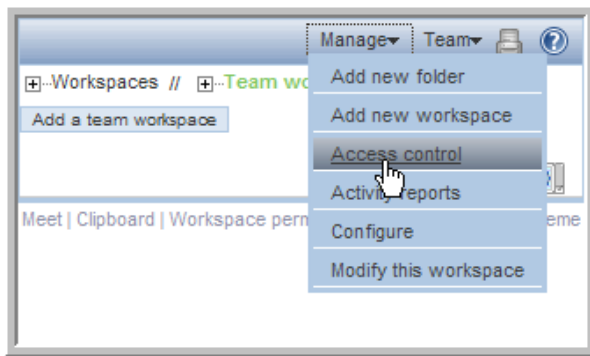
See the Online Help or ICEcore User Guide for details on adding users to groups.

## Granting the Team Creator Group Sole Team Workspace Creation Rights

- 1 Click *Team Workspace*.



- 2 Select the *Manage > Access Control* menu item.



The *Configure Access Control* page appears. This page allows you to assign the Role Definitions to specific groups and users from the workspaces and folders. The current page controls the access rights for the Top Team Workspace area.

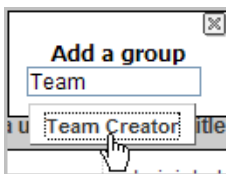
- 3 Click *Add a Group* in the *Access Rights* table.

Add user names from clipboard

		Add a role ▾					
		Workspace and folder administrator	Participant	Workspace creator	Site administrator	Visitor	
	Owner of workspace or folder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Team members	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<a href="#">Add a group ▾</a>	Group title	Group name	Workspace and folder administrator	Participant	Workspace creator	Site administrator	Visitor
	All users	allUsers	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">Add a user ▾</a>	User title	User name	Workspace and folder administrator	Participant	Workspace creator	Site administrator	Visitor
	administrator	administrator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Save changes

- 4 Start typing *Team Creator* in the *Add a Group* dialog box that appears, then select *Team Creator* from the drop-down list.

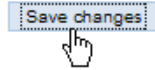


The *Team Creator* groups appears in the *Access Rights* table.

- 5 Deselect the *Workspace Creator* option for the *All Users* group and select the same right for the *Team Creator* group.

<b>Add a group ▾</b>	<b>Group title</b>	<b>Group name</b>	<b>Workspace and folder administrator</b>	<b>Participant</b>	<b>Site administrator</b>	<b>Visitor</b>	<b>Workspace creator</b>
	All users	allUsers	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Team Creator	Team Creator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Add a user ▾</b>	<b>User title</b>	<b>User name</b>	<b>Workspace and folder administrator</b>	<b>Participant</b>	<b>Site administrator</b>	<b>Visitor</b>	<b>Workspace creator</b>

- 6 Click *Save Changes*.



## 7 Click *Close*.

You have now created a specific group to control the creation of Team Workspaces. This is an example of how you use Role Definitions and access rights to configure your site. You should plan the access issues for your site so you can edit the default Role Definitions and default access rights for your workspaces prior to granting all your users access to the site.

## 2.7 Create Your Initial Workspaces

There are three types of workspaces in ICEcore: Global Workspaces (company-wide), Personal Workspaces (individual), and Team Workspaces (smaller teams). After a new workspace is created, every sub-workspace and subfolder inherits its access rights from the parent workspace by default. The workspace or folder administrator can deselect this inherit option for any individual sub-workspace and subfolder on the *Access Control* page for the individual workspace or folder.

Planning the initial content for your site is an important step to help your users learn and use the site. Without some content, users are lost. However, too much content (especially empty containers and a complex structure) might cause users to have trouble mapping to the real work they need to do. Before end users access the installation, the Global Workspace should have enough content to engage them, but not to overwhelm them. Also, a workspace hierarchy and set of dedicated applications are best developed in parallel with users using the product and providing feedback about what best serves their needs.

The best approach is to plan out a tight minimal set of content in the Global Workspace to provide the end users with a functional site that they can quickly navigate and start using.

- ♦ [Section 2.7.1, “Creating Teams,” on page 38](#)
- ♦ [Section 2.7.2, “Creating an Administration Team Workspace,” on page 38](#)
- ♦ [Section 2.7.3, “Setting the Administration Team Access Rights,” on page 40](#)
- ♦ [Section 2.7.4, “Using the Root Team Workspace,” on page 41](#)

### 2.7.1 Creating Teams

The team creation process can be simplified with some initial planning:

- ♦ Although, by default, anyone can create a team (unless you edit the default access rights; see [“Editing Default Team Workspace Access Rights” on page 34](#)) the process is much easier if a site administrator creates group names for teams before team creation occurs.
- ♦ Thinking through how you want to architect group names is a useful initial task.
- ♦ Access control is greatly simplified and enhanced by utilizing well-planned group names for your site.

### 2.7.2 Creating an Administration Team Workspace

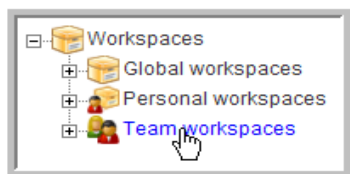
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**NOTE:** You should create an *Administration* group first to simplify the process for editing your administration access rights. You can then add this group to the administration team and set the

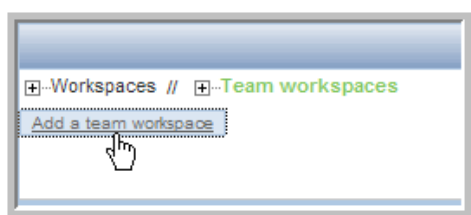
access rights for this group. In the future, you can add or delete users from this administration group and not worry about editing the administration team's access rights for individual members, because they are assigned to the group. For the following procedure assume that the `admin` group now exists.

---

- 1 On your Home Page, click *Team Workspaces*.



- 2 Click *Add a team workspace*.



- 3 Type a *Workspace title* for the new workspace.

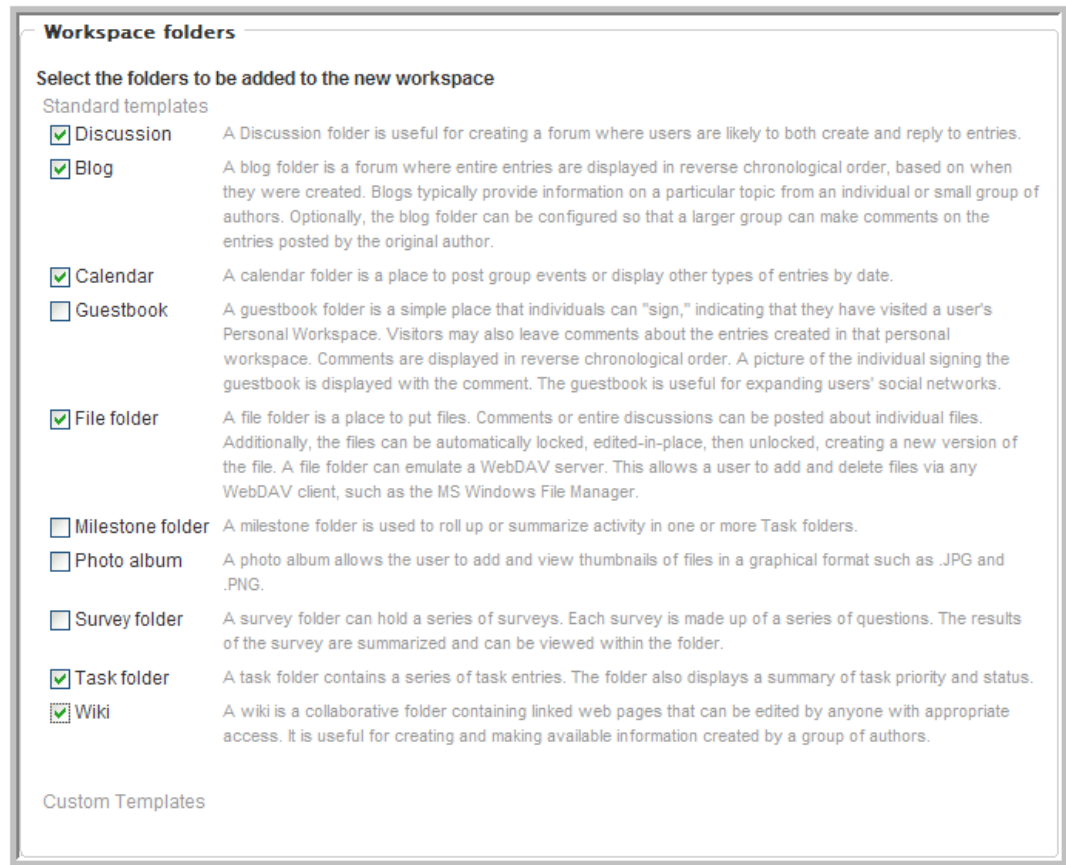
A screenshot of a web application's 'Title' form. The form has a title bar labeled 'Title'. Below the title bar is a section titled 'Workspace title' with a text input field containing the text 'ICEcore Administration Team'. Below the input field is a section titled 'Team Workspace' with a paragraph of text: 'A Team Workspace is a workspace in which you pick Team members as you create the workspace. Access is initially limited to Team members. An Accessory with Team member names is automatically placed on the workspace page. The Team workspace name will be displayed in each Team member's individual list of the teams on which he or she is a member. Select the types of folders you wish to have in the workspace.'

- 4 Select the team members. Make sure you add the admin group, which we will also use for setting access rights so that you only need to control membership to this group to control administrative access rights and administration workspace membership.

A screenshot of a web application's 'Team members' form. The form has a title bar labeled 'Team members'. Below the title bar are two sections: 'Users' and 'Groups'. The 'Users' section has a text input field and a 'Find people' button. The 'Groups' section has a text input field containing the letter 'a' and a 'Find groups' button. Below the 'Find groups' button is a list of groups, with 'admin' selected and marked with an 'x' in a box. At the bottom of the form are two expandable sections: 'Clipboard user names' and 'Team members'.

See the Online Help or the *ICEcore User Guide* for details on selecting users.

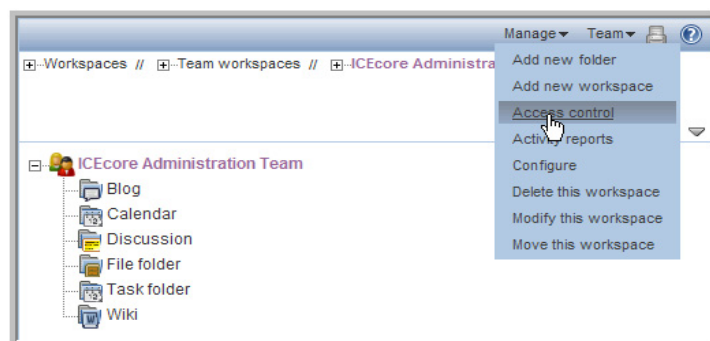
- 5 Select all the initial *Workspace folders* you want to create in this workspace.



- 6 Click *OK*.

## 2.7.3 Setting the Administration Team Access Rights

- 1 In the *ICEcore Administration Team* workspace, select the *Manage > Access Control* menu item.

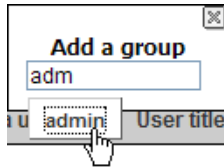


- 2 In the Access Rights table, click *Add a group*.



Add a group ▾	Group title	Group name	Workspace and folder administrator
	All users	allUsers	<input type="checkbox"/>

- 3 Start typing `admin`, then select *admin* from the drop-down list.



- 4 For the *admin* group, select the *Workspace and folder administrator*, *Participant*, and *Team member* roles.

Add a group ▾	Group title	Group name	Workspace and folder administrator	Participant	Team member	Workspace creator
	admin	ICEcore Administration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- 5 Click *Save Changes*.
- 6 Click *Close*.

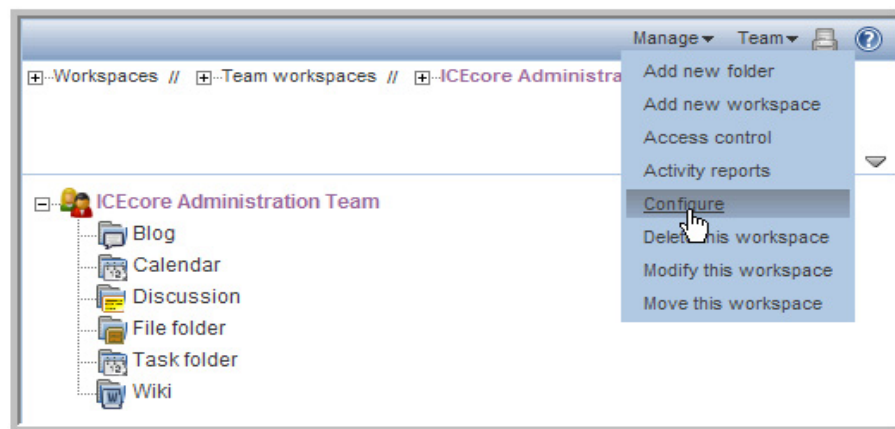
## 2.7.4 Using the Root Team Workspace

You can set any workspace to be a “root” team workspace, which allows anyone with the correct access rights to add workspaces under the root workspace. A root team workspace has the *Add a team workspace* button available to anyone with the appropriate access rights.

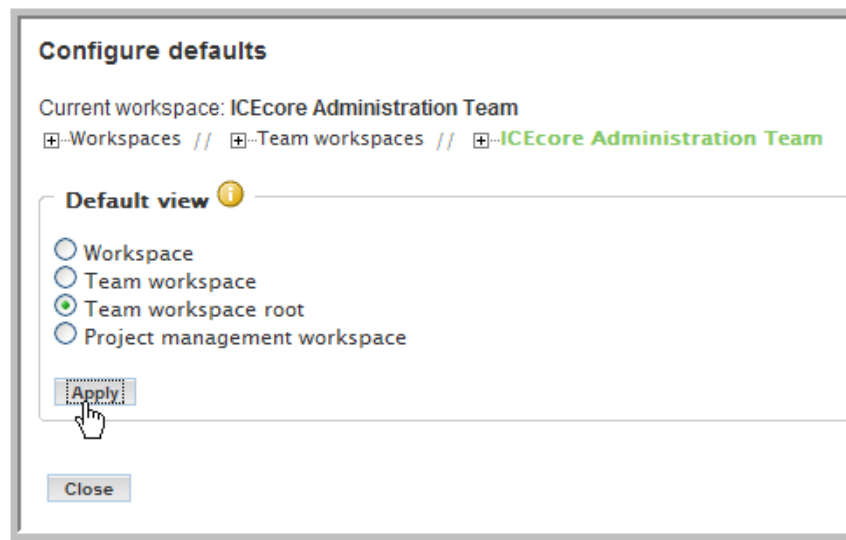
An administrator can set a workspace to be a root team workspace temporarily, while the sub-workspaces your company needs to set up are added, or set it to permanently be a root team workspace so that users can always create additional workspaces under the root team workspace. How you configure a specific area depends on what the workspaces are used for and how much control you want the users to have over the layout of the site.

To configure a Workspace to be a Root Team Workspace:

- 1 In the *ICEcore Administration Team* workspace, select the *Manage > Configure* menu item.



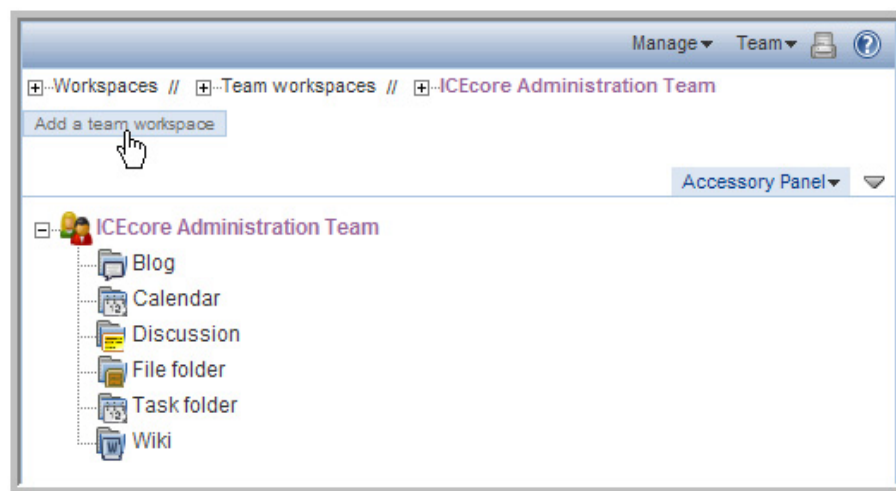
- 2 Select the *Team workspace root* option, then click *Apply*.



For a regular workspace, select the default *Workspace* view. If you want to track project tasks and milestones based on task completion, select the *Project management workspace* view. For a team workspace, select the *Team workspace root* view to display the *Add a team workspace* button. If your team workspace is organizational in nature and not intended to have team workspaces as its sub-workspaces, select the *Team workspace* view, which omits the *Add a team workspace* button.

- 3 Click *Close*.

The *Add a team workspace* button is now available in the *ICEcore Administration Team* workspace.



---

**NOTE:** Because only members (administrators) of the admin group have access to this workspace, you can make it a permanent *Team workspace root*, so any administrator can create sub-workspaces.

---

## 2.8 Invite Users to the Site

Most end users require some minimal guidance before entering the site. They need to be invited (there is no automatic way to do this, unless you invite them during team creation (ICEcore is designed to be team-centric). The invitation should contain the URL to the site. Also, you might want to include the *ICEcore Quick Start Guide* and *ICEcore User Guide* in the e-mail invitation.

Your organization might want to run some training sessions before having people enter the site.

## 2.9 Configuring Mirrored Folders

---

**NOTE:** Mirrored Folders are available only in the Enterprise Edition.

---

A mirrored folder is a ICEcore folder that uses a server file system directory as its file storage area instead of the normal ICEcore repository. Typically the directory is a file share, accessed via normal file sharing mechanisms. ICEcore attempts to keep its knowledge about the folder contents in sync with whatever is in the directory. The mirrored folder feature can mirror any WebDAV or local file path into ICEcore.

---

**NOTE:** This feature mirrors the files, but does not mirror ACLs.

---

You need to individually configure each mirrored folder. You must provide either a WebDAV path and one user's credentials to access all the files, or provide a local path via a mount command with one user's credentials to access all the files.

Because of the way mirrored folders are configured, they are intended to bring common (relatively static) file shares into the ICEcore environment. They are not appropriate for individual file shares or mounting a data volume into ICEcore. You can use ICEcore to add additional metadata around these files, including ICEcore-specific access controls.

The ICEcore installer allows you to initially add up to three mirrored folders, if you need to add more than three, the `installer.xml` has a section devoted to specifying mirrored folder resource drivers. These drivers make the files in the specified directory available to the ICEcore folders. It is important to note that the ICEcore process accesses the directories and that the user ID for ICEcore acts as a proxy for all ICEcore users.

To Create a Mirrored Folder:

---

**WARNING:** If you are a Window's user, you **MUST** use forward slashes when specifying path information for mirrored folders. For example, use `C:/Documents` NOT `C:\Documents`.

---

- 1 If not already present, add a `MirroredFolder` section to the `installer.xml` file.

This creates a Mirrored Folder Resource Driver. (Use `sample-installer.xml` as a template.)

- 1a Set the `enabled` attribute to `true` and specify a unique ID, title, the path to the directory to share, and the users and groups that can utilize this resource. To prevent accidental modifications to the file share, set the `readonly` attribute to `true`.
  - 1b After updating your `installer.xml` file, you need to run the ICEcore installer with the `Apply settings only` option, and then restart ICEcore to create the resource drivers.

- 2 Log into ICEcore as *admin*.
- 3 Create a custom entry type representing mirrored files:
  - 3a Go to *ICEcore Administration* portlet > *Form and view designers* > *Entry designer*.
  - 3b Click *Entry definitions*.
  - 3c In the dialog box on the right, click *Add a new entry definition*.
  - 3d Type a *Caption* (for example, *Mirrored File entry*) and *Name* (for example, *Mirrored File entry*), then click *OK*.
  - 3e Expand *Entry form definition* and click *Form*.
  - 3f In the dialog box on the right, click *Add*.
  - 3g In the *Standard form elements* dialog box on the right, click *File upload*.
  - 3h Type a *Caption* (for example, *Mirrored File*) and *Name* (database name, for example, *mirrored\_file*), select *External Resource Adapter (Mirrored folder only)* from the *Repository system* drop-down list, select the *Required* option, then click *OK*.
  - 3i Under *Entry form definition* > *Form*, click *Attachments - Attachments*.
  - 3j In the dialog box on the right, click *Modify*.
  - 3k Select the “*Hide this form element*” option, then click *OK*.
  - 3l Under *Entry form definition* > *Form*, click *Title - Title*.
  - 3m In the dialog box on the right, click *Modify*.
  - 3n Select the “*Use file name as entry title*” option, then click *OK*.
  - 3o Exit the *ICEcore Administration* portlet.
- 4 In ICEcore, create a folder of type *File folder*.
- 5 Within the folder, select the *Manage* > *Modify this folder* menu item.
- 6 Select the *Mirror external folders* option.
- 7 Select the mirrored folder resource driver that you created in **Step 1**.
- 8 (Optional) Specify a subdirectory within the resource driver’s root directory structure that you want this folder to mirror.
- 9 Click *OK* to make the folder a mirrored folder.

---

**NOTE:** After you make a folder a mirrored folder, you cannot revert it back to a regular folder or change the information you provided (that is, the resource driver name and path).

---

- 10 Configure the mirrored folder with the custom entry type that you defined in **Step 3** (*Mirrored File entry*):
  - 10a Within the mirrored folder, select the *Manage* > *Configure* menu item.
  - 10b In the *Default entry types* section, select the custom entry type you defined in **Step 3** (*Mirrored File entry*) and deselect all other entry types.
  - 10c Click *Apply*.
  - 10d Click *Close*.
- 11 Perform initial synchronization/loading by selecting the *Manage this folder* > *Synchronize* menu item from the folder listing.

For the current release of ICEcore, only synchronous/manual synchronization is supported.

## 2.10 Document Support

- ♦ [Section 2.10.1, “Uploaded Files,” on page 45](#)
- ♦ [Section 2.10.2, “Editing Support,” on page 45](#)

### 2.10.1 Uploaded Files

When a file is uploaded into ICEcore, it is processed in a number of ways:

- ♦ Textual content is extracted and sent to the search engine. For some file types (such as word processing documents) the textual content is obvious. For others, such as graphics files, there might be little or no textual content beyond basic metadata.
- ♦ If possible, a thumbnail and a scaled image somewhat larger than a thumbnail of the file are created. The thumbnail of a multi-page document shows the first page.
- ♦ If possible, a browser-only (HTML) version of the file is created. This allows people who do not have the ability to open the file with its native application to get an idea of what is in the file. The rendering is on a “best effort” basis and the level of detail and fidelity of the rendering varies greatly.

The Open and Enterprise versions of ICEcore vary greatly in their ability to perform the above tasks.

The Open version uses OpenOffice to provide access to common Microsoft and OpenOffice document formats.

The Enterprise version uses a licensed technology from the Stellent\* company (now part of Oracle), which provides processing capabilities to a wide spectrum of file types (over 200).

### 2.10.2 Editing Support

There are two ways of editing files stored in ICEcore:

- ♦ Download the file to your desktop, edit the file, and upload the file to the entry (as an attachment).

A new version of the attachment is created reflecting your changes. It is possible to manually lock the entry if you want to prevent other people from modifying any of the attached files.

- ♦ Certain file types provide an *Edit* button, which allows for “edit in place” functionality. When it is available, clicking on the *Edit* button launches a small Java applet, which launches the associated edit program for the file. The program accesses the file stored in ICEcore through WebDAV and is subject to the individual file locking protocols that WebDAV provides. Saving the file (or exiting the application) creates a new version of the attachment. No interaction with the browser is needed.

Because the edit in place option requires WebDAV URL support, which is not universally supported by the operating systems, you need to configure ICEcore to know which applications are WebDAV-aware.

The following illustration shows the default configuration of file and document support in ICEcore.

**Figure 2-2** Document and File Support

Ext	Description	HTML View Thumbnails				Application		Edit via		Search	
		Open	Ent	Open	Ent	Windows	Linux	WebDAV		Open	Ent
doc	MS Word	?	X		X	winword	ooffice	X		X	X
xls	MS Excel	?	X		X	excel	ooffice	X		X	X
ppt	MS Powerpoint	?	X		X	powerpnt	ooffice	X		X	X
ods	OO Calc	X	X		X	soffice	ooffice	X		X	X
odg	OO Draw	X	X		X	soffice	ooffice	X		X	X
odp	OO Impress	X	X		X	soffice	ooffice	X		X	X
odf	OO Math	X	X		X	soffice	ooffice	X		X	X
odt	OO Writer	X	X		X	soffice	ooffice	X		X	X
sxw	OO Text	?	X		X	soffice	ooffice	X		X	X
docx	MS Word 2007		X		X	winword	?	W			X
xlsx	MS Excel 2007		X		X	excel	?	W			X
pptx	MS Powerpoint 2007		X		X	powerpnt	?	W			X
123	Lotus 1-2-3		X		X						X
avi	Windows Multimedia		X		X						X
bmp	Bitmap Graphic		X		X						X
cdr	Corel Draw		X		X						X
cgm	Computer Graphics Metafile		X		X						X
dsf	Micrographix Designer		X		X						X
dwg	AutoCAD Drawing Format		X		X						X
dxf	AutoCAD Exchange Format		X		X						X
gif	Graphics			?	X						X
hpgl	HP Graphics Language		X		X						X
htm	HTML		X		X						X
html	HTML		X		X						X
jpg	Graphics			X	X						X
lwp	Lotus WordPro		X		X						X
mdb	MS Access		X		X						X
mov	QuickTime Movie		X		X						X
mp3	Audio		X		X						X
mpeg	Movie		X		X						X
mpg	Movie		X		X						X
mpp	MS Project		X		X						X
pdf	Adobe Portable Document		X		X						X
png	Graphics			?	X						X
pps	MS Powerpoint		X		X	powerpnt		?			X
ps	Postscript		X		X						X
psd	Adobe Photoshop		X		X						X
qt	QuickTime Movie		X		X						X
rm	Real Movie		X		X						X
rtf	Rich Text Format		X		X						X
tif	Graphics		X		X						X
tiff	Graphics		X		X						X
txt	Text		X		X					X	X
vsd	MS Visio		X		X	??		?			X
wav	Windows Wave Audio		X		X						X
wk1	Lotus Worksheet		X		X						X
wk3	Lotus Worksheet		X		X						X
wk4	Lotus Worksheet		X		X						X
wpd	WordPerfect		X		X						X
xbm	X-Windows Bitmap		X		X						X
xml	XML		X		X						X
xpm	X-Windows Pixmap		X		X						X
zip	Compressed files (PKZIP)		X		X						X

# Creating a Basic Workflow Process

# 3

When you are developing a workflow process with Novell® ICEcore, use the *ICEcore Administration* portlet. In ICEcore, the completed workflow process is a separate function that you can then apply to entries, using one of several methods ICEcore provides to start the workflow.

As one example, you can begin by creating a discussion topic in a folder, and then initiating an allowed workflow process for that entry (workflow availability is assigned in each folder's configuration). The topic enters into the first state of the initiated process, and the workflow begins only for that one particular entry. As another example, you can specify in a folder's configuration to initiate a specific workflow process automatically every time a user creates an entry of a specific type (including your own customized entries).

This section shows you how to implement a basic workflow design. The **Advanced Workflow** section expands the design (using ICEcore's Advanced Workflow add-on module) to more closely match the needs of a typical production-ready system (for example, using questions).

See **Section 5.1, "Reviewing the Workflow Features," on page 89** for an overview of all the workflow features in the designer (this includes the Advanced Workflow features).

The following topics are covered in this section:

- ♦ **Section 3.1, "Creating a Workflow," on page 47**
- ♦ **Section 3.2, "Setting Access Controls," on page 59**
- ♦ **Section 3.3, "Notifying Participants," on page 64**
- ♦ **Section 3.4, "Using the Workflow in a Folder," on page 69**

## 3.1 Creating a Workflow

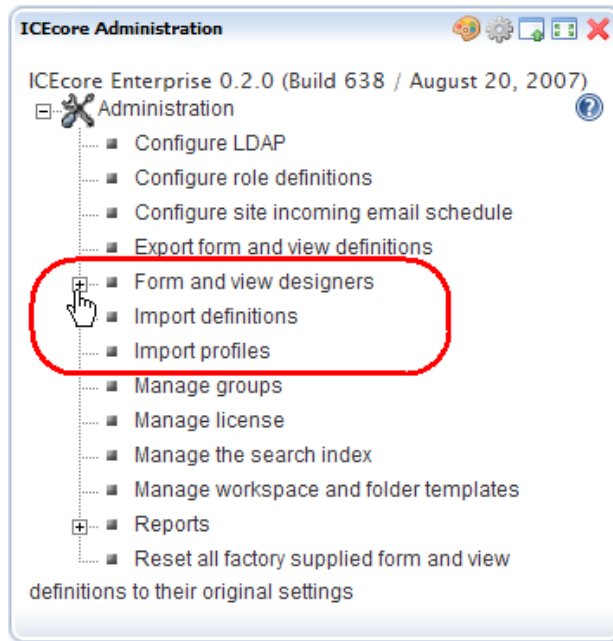
The following procedures show you how to define a workflow, add the states it requires, and define the transitions it requires. The example used is the creation of a Paid Time Off (PTO) request workflow.

- ♦ **Section 3.1.1, "Defining a Workflow," on page 47**
- ♦ **Section 3.1.2, "Adding States to a Workflow," on page 49**
- ♦ **Section 3.1.3, "Defining Manual Transitions for a Workflow," on page 52**
- ♦ **Section 3.1.4, "Configuring a Folder to Use This Workflow," on page 56**
- ♦ **Section 3.1.5, "Testing the New Workflow," on page 57**

### 3.1.1 Defining a Workflow

- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, click the *Add Content* link in the upper right corner. This brings up a panel of portlets along the left

margin. Expand the *ICEcore* section to add more ICEcore features, such as the *ICEcore Administration* portlet.



2 Click *Workflow designer*.

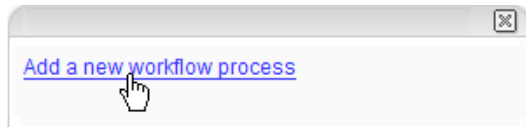


3 Click *Workflow processes*.



4 In the options dialog on the right, click *Add a new workflow process*.





- 5 In the form that appears on the right, type the *Name* (workflow name) and *Caption* (name that appears in ICEcore) for this workflow.

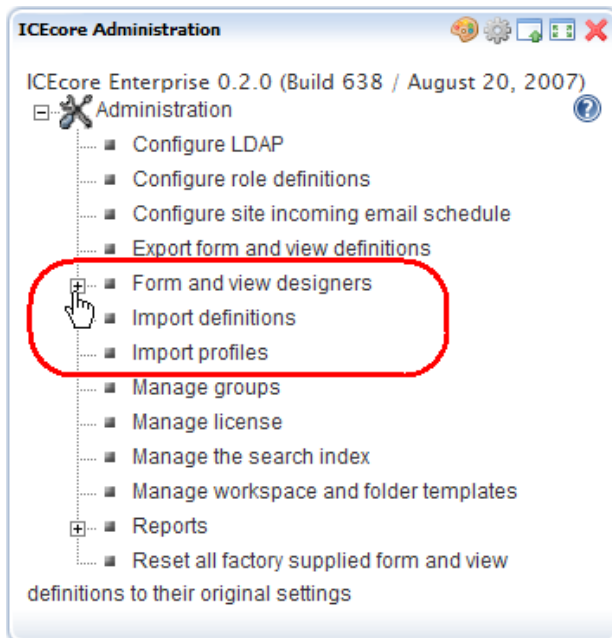
A form with two text input fields. The first field is labeled "Caption" and contains the text "PTO Request". The second field is labeled "Name" and contains the text "PTO Request Workflow". Below the fields are two buttons: "OK" and "Cancel".

- 6 Click *OK*.

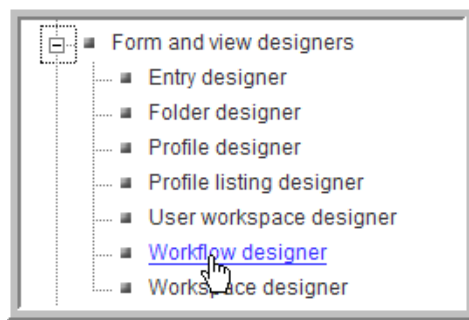
The PTO workflow is now defined in ICEcore.

### 3.1.2 Adding States to a Workflow

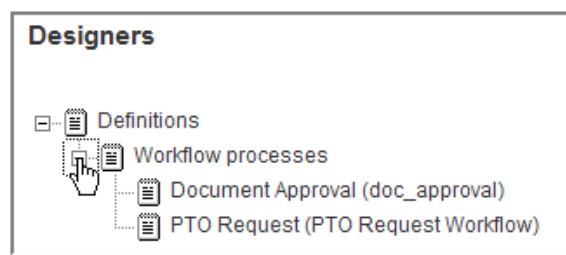
- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, click the *Add Content* link in the upper right corner. This brings up a panel of portlets along the left margin. Expand the *ICEcore* section to add more ICEcore features, such as the *ICEcore Administration* portlet.



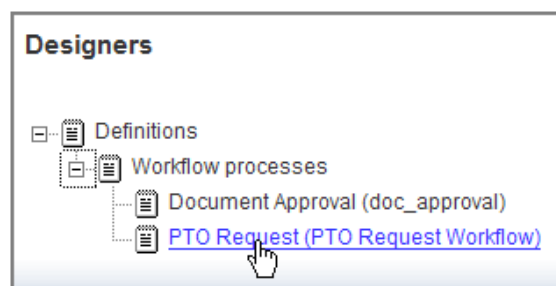
2 Click *Workflow designer*.



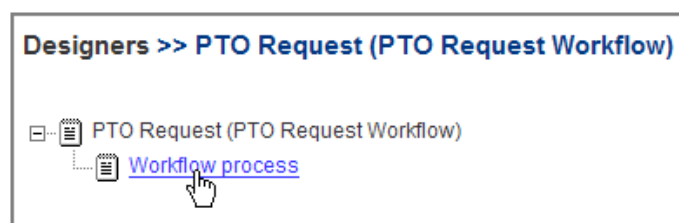
3 Expand *Workflow processes*.



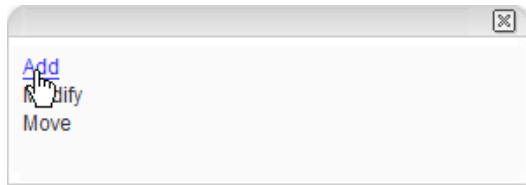
4 Click *PTO Request*.



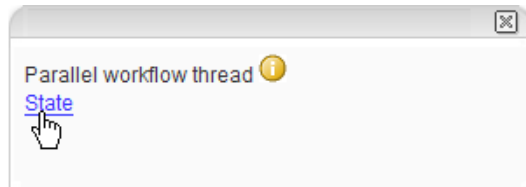
5 Click *Workflow process*.



6 In the options dialog on the right, click *Add*.



- 7 Click *State* to add a state to this workflow.



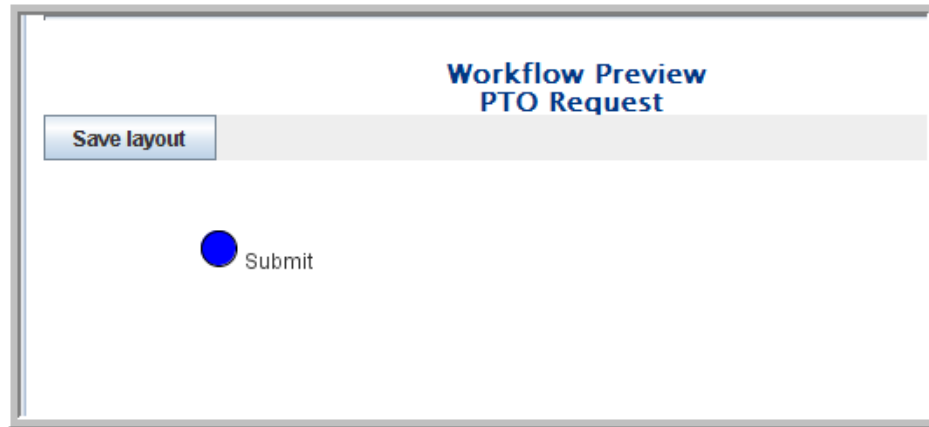
- 8 Type the *Caption* (name used in ICEcore), *Data Name* (database name), and *Description* for this workflow as follows:

The *Data Name* is an internal-use database name. Names for elements in one definition must be unique. The first character must be an alphabetic character (a-z, A-Z). For the rest, legal characters are alphanumeric characters (a-z, A-Z, 0-9), hyphens (-), and underscores (\_).

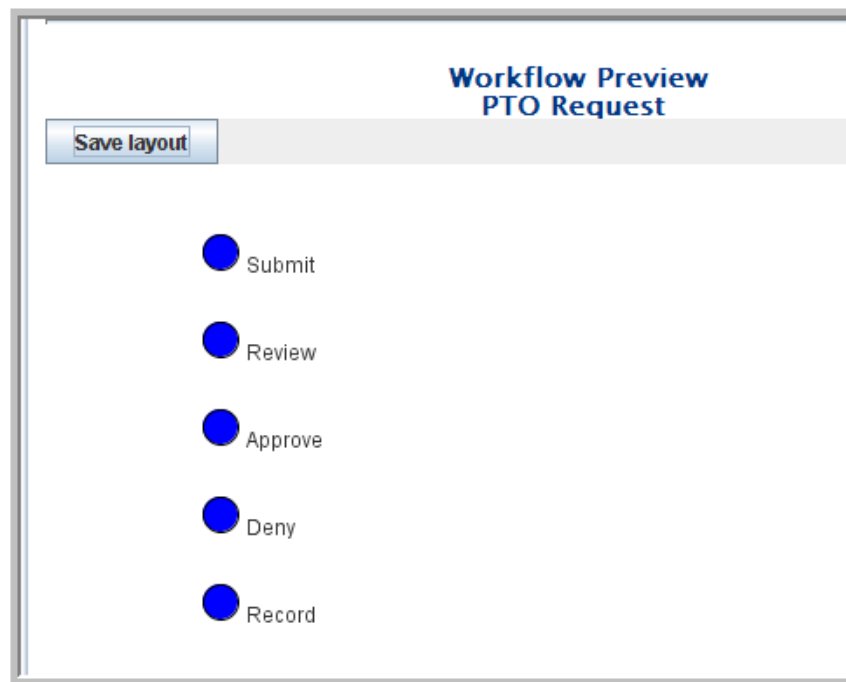
- ♦ *Caption*: Submit
- ♦ *Data Name*: Submit\_PTO\_Request
- ♦ *Description*: PTO Request Submitted

- 9 Click *OK*.

The new state is added to the workflow and appears in the Workflow Preview area at the bottom part of the window.



- 10 Repeat these steps to add the *Review*, *Approve*, *Deny*, and *Record* states.




---

**NOTE:** After the states are defined, the next step is to develop transitions that move an entry from one state to the next. You can also take action when a process enters into or exits from a state. For example, upon entry (or exit) you can send a notification, begin or end a parallel process, or set a variable.

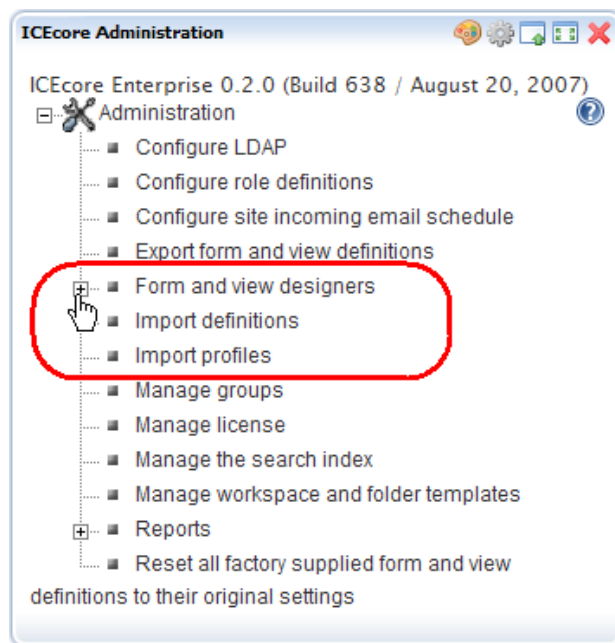
---

### 3.1.3 Defining Manual Transitions for a Workflow

The following steps show you how to set up manual transitions (only manual transitions are available without the Advanced Workflow add-on module) between the states in this workflow.

- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, click the

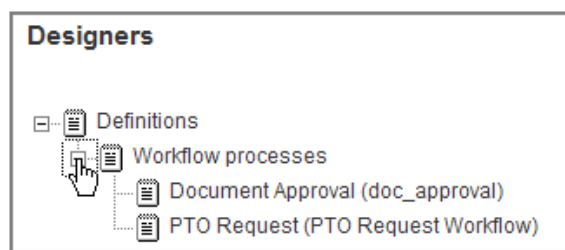
Add *Content* link in the upper right corner. This brings up a panel of portlets along the left margin. Expand the *ICEcore* section to add more ICEcore features, such as the *ICEcore Administration* portlet.



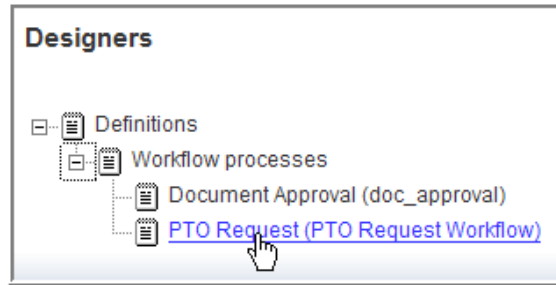
2 Click *Workflow designer*.



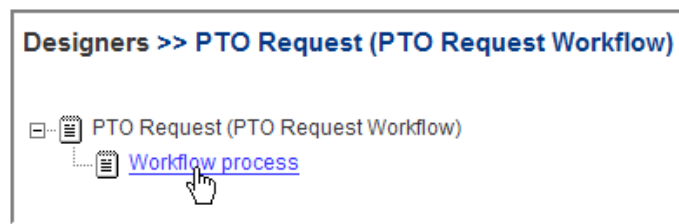
3 Expand *Workflow processes*.



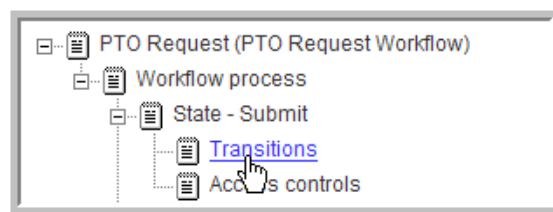
4 Click *PTO Request*.



- 5 Click *Workflow process*.



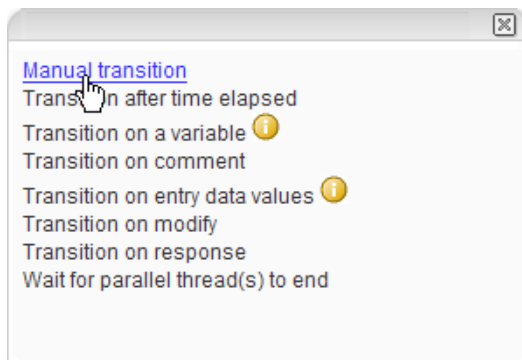
- 6 Under *Workflow process*, expand *State - Submit* and click *Transitions*.



- 7 In the options dialog on the right, click *Add*.

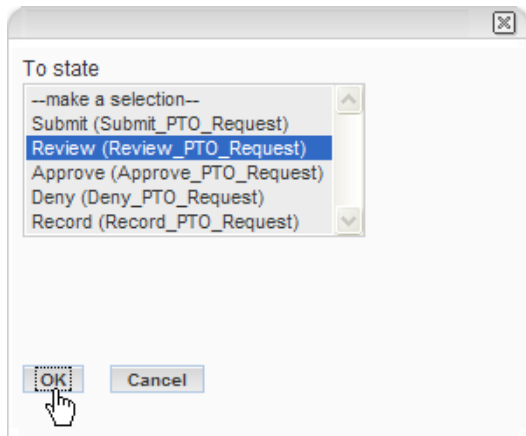


- 8 In the options dialog, click *Manual Transition*.

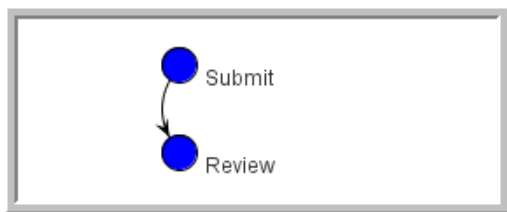


The *Manual Transition* is the only available transition in ICEcore unless you are using the Advanced Workflow add-on module.

- 9 In the *To state* list box, select *Review (Review\_PTO\_Request)* and click *OK*.

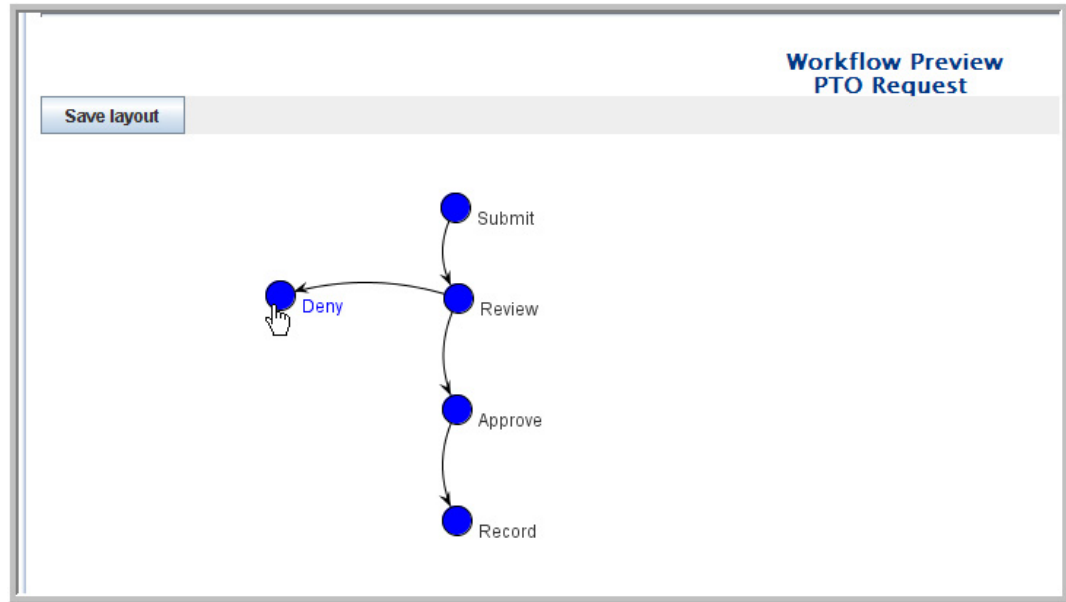


After you successfully complete the previous steps, the preview portion of the page displays an arrow in the flowchart that represents the newly defined transition.



- 10 Repeat these steps to create the following manual transitions:

- ♦ *Review to Approve*
- ♦ *Review to Deny*
- ♦ *Approve to Record*

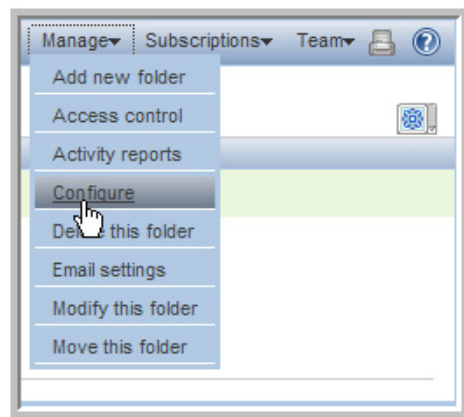


**NOTE:** You can drag each state to the position you want it to appear in the preview area and click *Save layout* to save these positions for ease of viewing.

### 3.1.4 Configuring a Folder to Use This Workflow

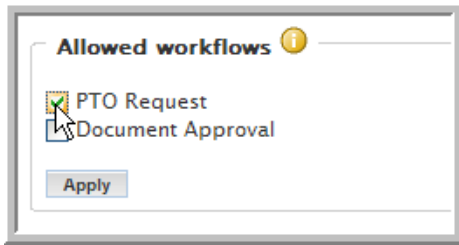
You need to configure each folder in which you want to use this new workflow. The following is an example procedure.

- 1 In ICEcore, go to the *PTO Requests* folder in Human Resources.
- 2 Select the *Manage > Configure* menu item.



- 3 Under *Allowed Workflows*, select the *PTO Request* option.





4 Click *Apply*.

5 Click *Close*.

User can now use the *Workflow > Start workflow: PTO Request* menu item when viewing entries in this folder.

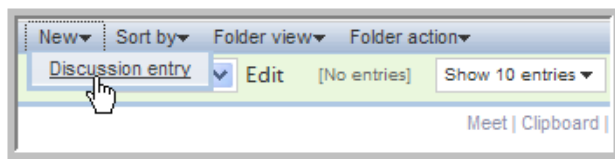
### 3.1.5 Testing the New Workflow

After creating a minimally functional workflow process, you should verify that the transitions function properly. (At this state of its development, the process does not define specific access to the workflow based upon the participant. This means that any user with access rights to the folder that is associated with this workflow can transition the entry through the entire workflow.) This example uses John Waters.

1 Log in as John Waters (jwaters). See [Section 2.2, “Initial Logon,” on page 15](#).

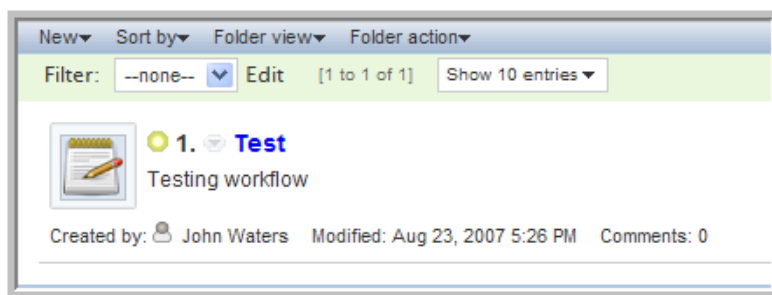
2 Go to the *PTO Requests* folder in Human Resources.

3 Click the *New > Discussion entry* menu item to add a discussion topic.



4 Type the *Title* and *Description* information and click *OK*.

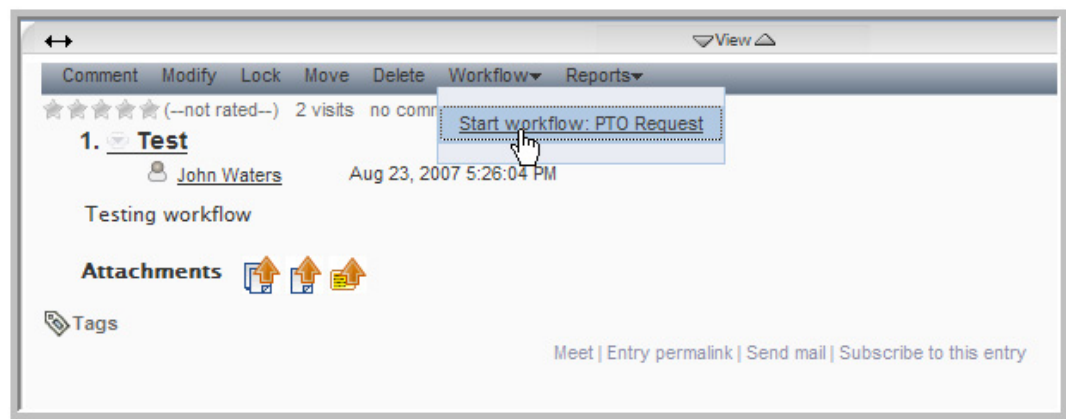
The new entry appears in the folder.



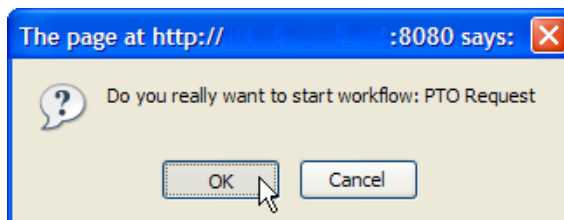
5 Click the entry title to view the entry.



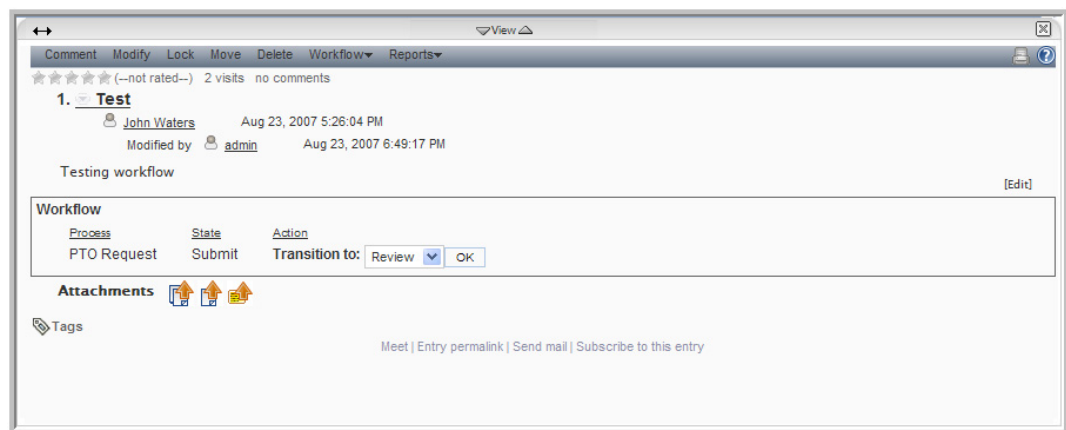
6 Select the *Workflow > Start workflow: PTO Request* menu item.



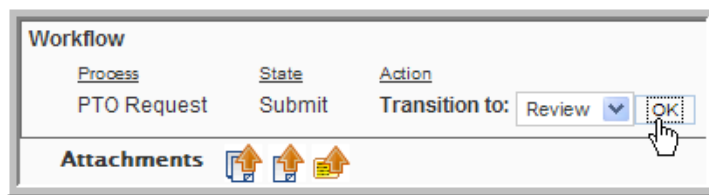
7 In the confirmation dialog that appears, click *OK* to start the *PTO Request* workflow.



The *PTO Request* workflow is added to entry with the entry in the initial *Submit* state.



- 8 Select *Review* from the *Transition to:* drop-down list and click *OK*.



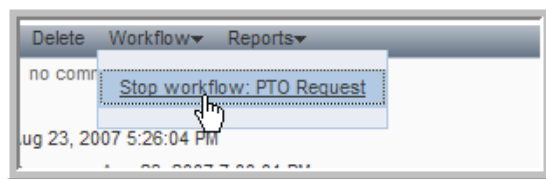
The *State* should change to *Review*.

- 9 Select *Deny* from the *Transition to:* drop-down list and click *OK*.

The state should change to *Deny* and there should be no actions available (the *Transition to:* drop-down list should be gone), because there are no transitions from *Deny*.



- 10 Select the *Workflow > Stop workflow: PTO Request* menu item to stop the workflow process.



- 11 Select the *Workflow > Start workflow: PTO Request* menu item to start the workflow process.
- 12 Transition the entry through all the states (except *Deny*) until you reach *Record* (no transitions exist from *Record*).

The manual transitions allow the user to change the state of this workflow, but in a real business process these transitions should be controlled by specific groups or individuals. The next section, [Section 3.2, “Setting Access Controls,” on page 59](#), deals with setting access controls in the workflow.

## 3.2 Setting Access Controls

Using the access control feature, you can specify which participants can participate in causing an entry to transition from one state to another. Also, if the entry contains sensitive information at any time during the workflow process, you can restrict who can view the entry. This feature implements “per entry” access control, checking privileges for individual entries at each state in the workflow process.

The following sections describe how to set up access control in ICEcore as well as using various approaches with the workflow tools that set access control for one or more states:

- ♦ [Section 3.2.1, “What is Access Control?,” on page 60](#)
- ♦ [Section 3.2.2, “Planning Access Control,” on page 60](#)
- ♦ [Section 3.2.3, “Setting Access Rights,” on page 61](#)

- ♦ [Section 3.2.4, “Summary,” on page 63](#)

### 3.2.1 What is Access Control?

When you create a workflow process using default settings, every user who can enter the discussion forum has access to view the entry and to participate in state changes. For almost all production-ready workflow systems, it is necessary to alter this default access control, so that:

- ♦ Only members of the team assigned to the business process can participate in the workflow process.
- ♦ Only designated responsible individuals participate in changing states.

---

**NOTE:** Access control is the term used to identify which users have the right to perform specific tasks at each state within the workflow process.

---

### 3.2.2 Planning Access Control

Before configuring access, identify the following:

- ♦ States: You defined these in [Section 3.1.2, “Adding States to a Workflow,” on page 49](#).
- ♦ Access rights: For each state, define who can view, modify or delete, respond to, and participate in state transitions.
- ♦ Users or Groups: Map “participants” to usernames and group names within ICEcore.

Create a table to use for access-control planning as follows:

**Table 3-1** *Access Control Planning*

State	Participant	Access Required
Submit	The employee, or individual requesting time off	<ul style="list-style-type: none"><li>♦ Only the manager and employee can see an employee's request.</li><li>♦ The manager is the only one allowed to transition the work to <i>Review</i>.</li></ul>
Review	The manager	<ul style="list-style-type: none"><li>♦ The manager is the only one allowed to transition the work to <i>Approve</i> or <i>Deny</i>.</li><li>♦ Employees can review only their own pending requests in this state.</li></ul>
Approve	The manager and employee	<ul style="list-style-type: none"><li>♦ The manager, employee, and HR may view the request in this state.</li><li>♦ Only HR can transition to <i>Record</i>.</li></ul>
Deny	The manager and employee	The manager and employee can review requests in the <i>Deny</i> state.
Record	Human Resources	The manager, employee, and HR can view the work in this completed state.

Subsequent topics in this section describe how to implement this plan for access control.

### 3.2.3 Setting Access Rights

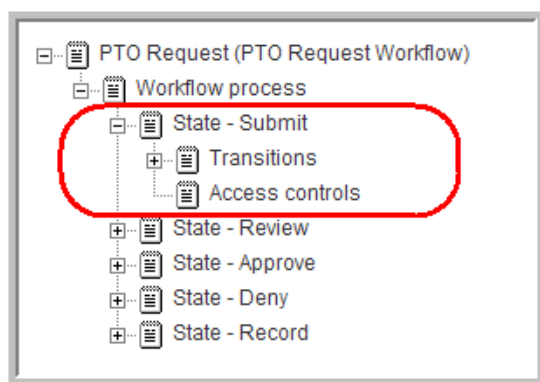
Entries in the *Submit* state need to be viewable by the users who created the *PTO Requests*, but not by any of their peers. In addition, only a manager can transition an entry from *Submit* to *Review*, and from *Review* to *Deny* or *Approve*. Human Resources needs to transition each entry from *Approve* to *Record*.

- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, click the *Add Content* link in the upper right corner. This brings up a panel of portlets along the left margin. Expand the *ICEcore* section to add more ICEcore features, such as the *ICEcore Administration* portlet.
- 2 Click *Workflow designer*.
- 3 Expand *Workflow processes*.
- 4 Click *PTO Request*.
- 5 Expand *Workflow process*.
- 6 Add the *Access controls* to the workflow states:
  - 6a Click *State - Submit*.



- 6b In the options dialog on the right, click *Add*.
  - 6c Click *Access controls*.

*Access controls* is added below *Transitions*.

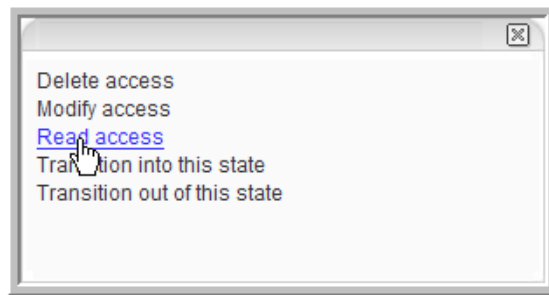


- 6d Repeat **Step 6a** through **Step 6c** for each state to add the *Access controls*.
- 7 Set the *Read access* rights:

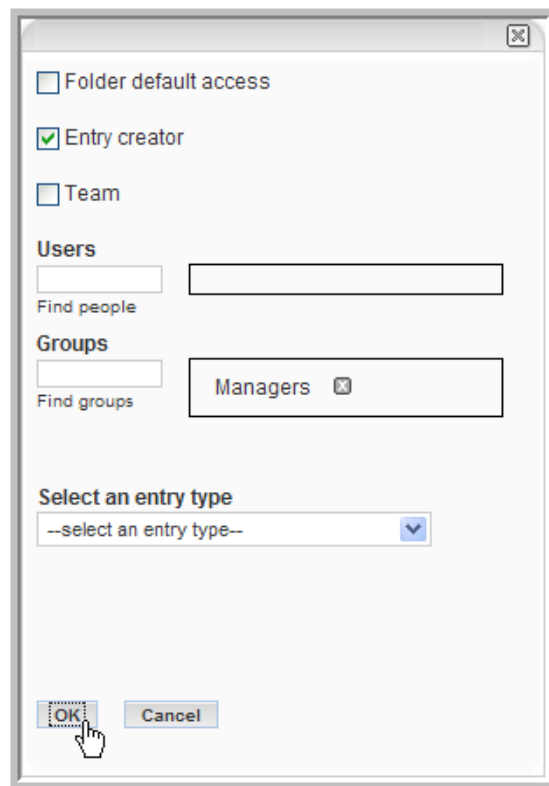
**7a** Under *State - Submit*, click *Access controls*.

**7b** Click *Add*.

**7c** Click *Read access*.



**7d** Deselect the *Folder default access* option, select the *Entry creator* option, add the *Managers* group, then click *OK*.



Now only the entry creator and managers can view these entries.

The *Select an entry type* drop-down list allows you to add any user lists that might be assigned to specific entry types.

**7e** Repeat **Step 7a** through **Step 7d** for each state to add the *Read access* rights (make sure to give the *Human Resources* group *Read access* rights in the *Approve* and *Record* states).

**8** Set the *Transition out of this state* access controls:

**8a** Under *State - Submit*, click *Access controls*.

**8b** Click *Add*.

**8c** Click *Transition out of this state*.

**8d** Deselect the *Folder default access* option, add the *Managers* group, then click *OK*.

Now only a Manager can transition the entry out of the *Submit* state.

**8e** Repeat **Step 8a** through **Step 8d** for the *Review* and *Approve* states with the following rights:

- ♦ *Review*: Managers group only
- ♦ *Approve*: Human Resources group only

**9** Set the *Transition into this state* access controls:

**9a** Under *State - Review*, click *Access controls*.

**9b** Click *Add*.

**9c** Click *Transition into this state*.

**9d** Deselect the *Folder default access* option, add the *Managers* group, then click *OK*.

Now only a Manager can transition the entry into the *Review* state.

**9e** Repeat **Step 9a** through **Step 9d** for the *Approve*, *Deny*, and *Record* states with the following rights:

- ♦ *Deny*: Managers group only
- ♦ *Approve*: Managers group only
- ♦ *Record*: Human Resources group only

The access rights for this workflow are now set. You can log in as the members of the various groups to walk through the workflow and test it.

---

**NOTE:** To map the business process correctly, you must set the *Transition out of this state* and the *Transition into this state* access rights correctly for all states in your workflow.

---

## 3.2.4 Summary

Access control is an important aspect of workflow, because it allows a workflow designer to set levels of security and access to each task within the workflow.

While developing a workflow process, you can use workflow tools to set access for one state at a time or to work with more than one state simultaneously. Access control is comprised of who can see, modify or delete, respond to (a workflow question), or transition into or out of a specified state. When defining access control, you can specify all users, entry creators, or specific users and groups.

When you consider granting workflow access to an individual, make a distinction between times when more than one individual can use the workflow and when a specific individual always uses the workflow. The *Entry creator* individual applies to any ICEcore user who can create entries in that folder. However, there might be occasions when a specific user should be the only user who has certain access rights every time the workflow runs for an entry.

## 3.3 Notifying Participants

ICEcore can send e-mail notifications at different states of the workflow process. These notifications alert participants that the work has reached a state that requires their attention, provide information

to managers who are tracking the process of the work, and provide a one-click method for a participant to view and work with the entry.

---

**NOTE:** In order to use workflow notifications, ICEcore must be configured to enable e-mail notifications. For more information see [“Mail Setup” on page 27](#) and [“Setting up a Folder for Posting” on page 29](#).

---

The following sections walk you through these tasks:

- ♦ [Section 3.3.1, “Defining an On Entry Process;,” on page 64](#)
- ♦ [Section 3.3.2, “Adding a Notification to the On Entry Process,” on page 66](#)
- ♦ [Section 3.3.3, “Testing the Notifications,” on page 68](#)
- ♦ [Section 3.3.4, “Summary,” on page 68](#)

To determine places in the process where a notification can be helpful, review the following table:

**Table 3-2** *Time Off Request Process*

State	Participants	Action Required
N/A	The employee (or person requesting time off)	Enters the <i>PTO Request</i> .
Submit	The manager	Indicates that he or she has received the request.
Review	The manager	Reviews, and then approves or denies the request.
Approve	The manager and employee	The manager indicates that the request is approved. The employee must be notified when the request is approved.
Deny	The manager and employee	The manager indicates that the request is denied. The employee must be notified when the request is denied.
Record	Human Resources	HR enters the PTO Request into the Time Off database.

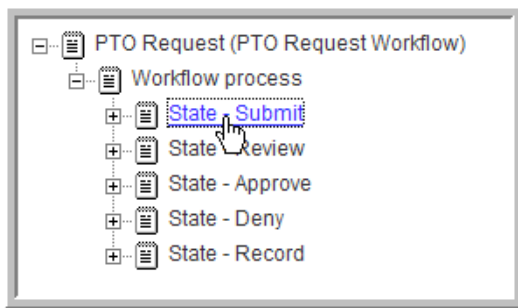
### 3.3.1 Defining an On Entry Process:

You can take action when a process enters into or exits from a state. For example, upon entry (or exit) you can send a notification, begin or end a parallel process, or set a variable.

- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, click the *Add Content* link in the upper right corner. This brings up a panel of portlets along the left margin. Expand the *ICEcore* section to add more ICEcore features, such as the *ICEcore Administration* portlet.
- 2 Click *Workflow designer*.
- 3 Expand *Workflow processes*.
- 4 Click *PTO Request*.
- 5 Expand *Workflow process*.



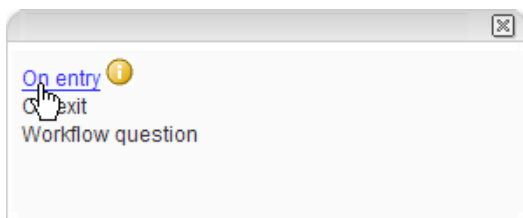
6 Click *State - Submit*.



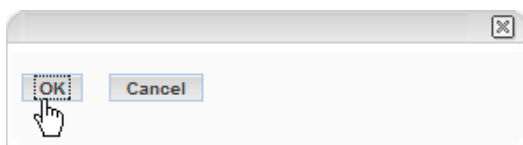
7 In the options dialog on the right, click *Add*.



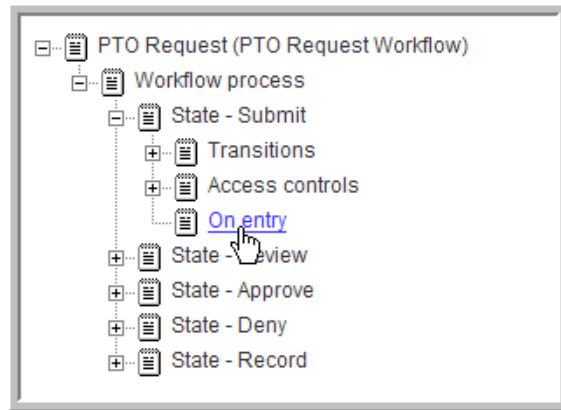
8 Click *On entry*.



9 Click *OK*.

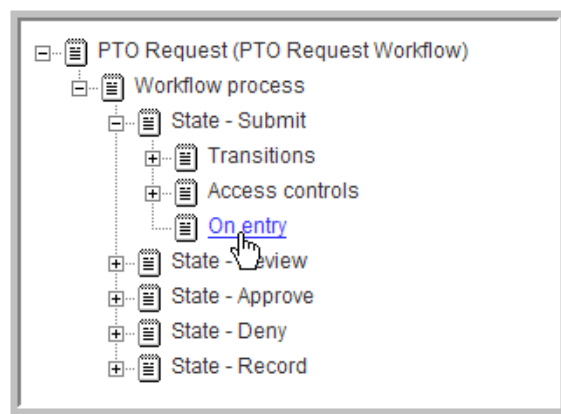


The *On entry* process is added to the Submit state.



### 3.3.2 Adding a Notification to the On Entry Process

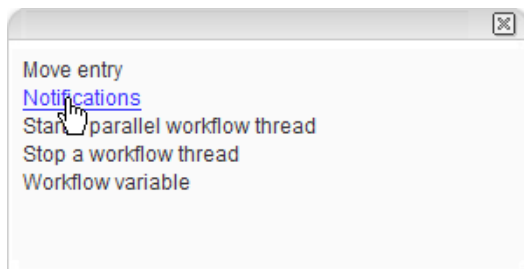
- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, click the *Add Content* link in the upper right corner. This brings up a panel of portlets along the left margin. Expand the *ICEcore* section to add more ICEcore features, such as the *ICEcore Administration* portlet.
- 2 Click *Workflow designer*.
- 3 Expand *Workflow processes*.
- 4 Click *PTO Request*.
- 5 Expand *Workflow process*.
- 6 Expand *State - Submit*.
- 7 Click *On entry*.



- 8 Click *Add*.



9 Click *Notifications*.

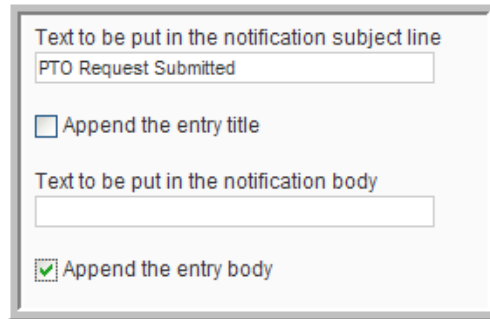


10 Add the *Managers* group to the form that appears.

A screenshot of a notification configuration form with a close button (X) in the top right corner. The form contains the following sections:

- ☐ Entry creator
- ☐ Team
- Users**  
[Text input field] [Text input field]  
Find people
- Groups**  
[Text input field with 'm'] [List box containing 'Managers' with a selection icon]  
Find groups
- Select an entry type**  
--select an entry type-- [Dropdown arrow]
- Text to be put in the notification subject line  
[Text input field]
- ☐ Append the entry title
- Text to be put in the notification body  
[Text input field]
- ☐ Append the entry body
- OK Cancel

11 Type a subject line for this notification and click the *Append the entry body* option to use the entry in the body of the notification e-mail.



Text to be put in the notification subject line  
PTO Request Submitted

☐ Append the entry title

Text to be put in the notification body

☒ Append the entry body

**12** Click *OK* to create the notification.

The *Notification* is added under the *On entry* process.



**13** Repeat this procedure to create a notification of request approval and a notification of request denied with the following settings:

- Notification of Approval: Notify the *Entry creator* and the *Human Resources* group whenever the manager approves a PTO Request. The *Human Resources* group must record the time in the Time Off database and transition the request to the *Record* state.
- Notification of Denial: Notify the *Entry creator* whenever the manager denies a PTO Request.

### 3.3.3 Testing the Notifications

To test the notifications, log on as different users and move an entry through the workflow process. As the entry transitions, you should receive e-mail notification. If not, make sure that you configured e-mail settings on your server and review the workflow notifications you have created.

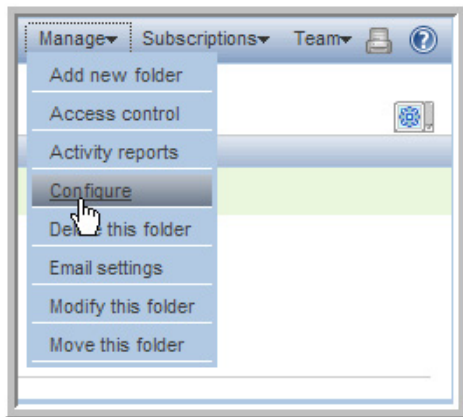
### 3.3.4 Summary

Notifications are a vital mechanism for maintaining the efficient and proper flow of work through the process. Notification can be sent to a number of different workflow participants, whenever a workflow process enters or exits a specific state. In addition to many other reasons, notifications can communicate approval, denial, completion or overdue status.

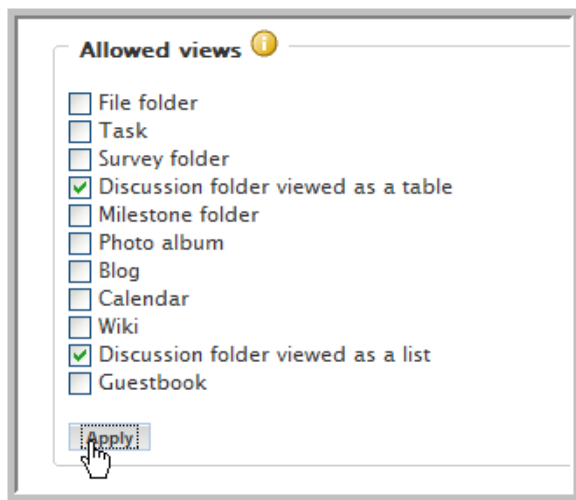
## 3.4 Using the Workflow in a Folder

The following procedure shows you how to set up a folder to use this workflow with a custom entry (see “Using Custom Entries” on page 71).

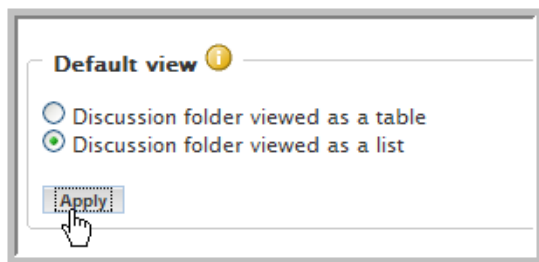
- 1 In ICEcore, go to the *PTO Requests* folder in Human Resources.
- 2 Select the *Manage > Configure* menu item.



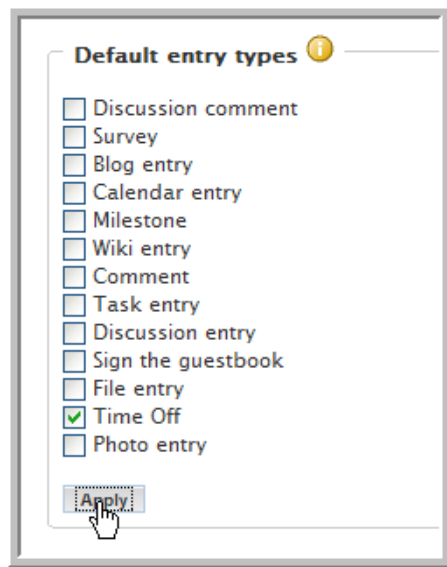
- 3 Under *Allowed Views*, select the *Discussion folder viewed as a table* and *Discussion folder viewed as a list* options, deselect any others, then click *Apply*.



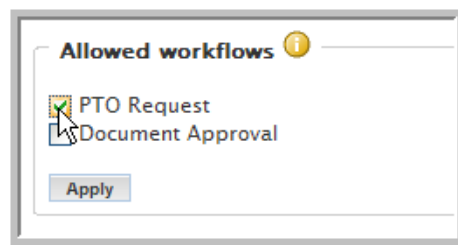
- 4 Under *Default view*, select the *Discussion folder viewed as a list* option, then click *Apply*.



- 5 Under *Default entry types*, select the *Time Off* entry type, deselect any others, then click *Apply*.

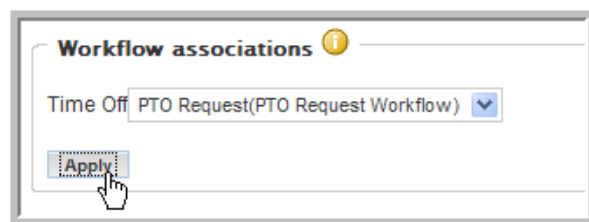


- 6 Under *Allowed workflows*, select the *PTO Request* option.



- 7 Click *Apply*

- 8 Under *Workflow associations*, select *PTO Request* from the *Time Off* drop-down list, then click *Apply*.



A drop-down list appears for each *Default entry type* you select. When you use a drop-down list to select a workflow process, that process begins automatically whenever a user creates an entry of that type.

- 9 Click *Close*.

Users can now only enter *Time Off* entries in this folder, which automatically triggers the *PTO Request* workflow process.

# Using Custom Entries

# 4

Novell® ICEcore allows you to create custom entries with custom forms and views. These entries allow you to use unique forms and views when making specific types of entries. This section shows you how to design these entries and assign them to a workspace folder. The next section, “[Advanced Workflow](#)” on page 89, shows you how to create advanced workflows in ICEcore. You can design custom entries to enhance the functionality of your workflows. The advanced workflow chapter shows you some of the functionality of the Advanced Workflow Add-On module that you can purchase.

This section contains the following topics:

- ♦ [Section 4.1, “Creating a Custom Entry,” on page 71](#)
- ♦ [Section 4.2, “Using a Custom Entry,” on page 84](#)

## 4.1 Creating a Custom Entry

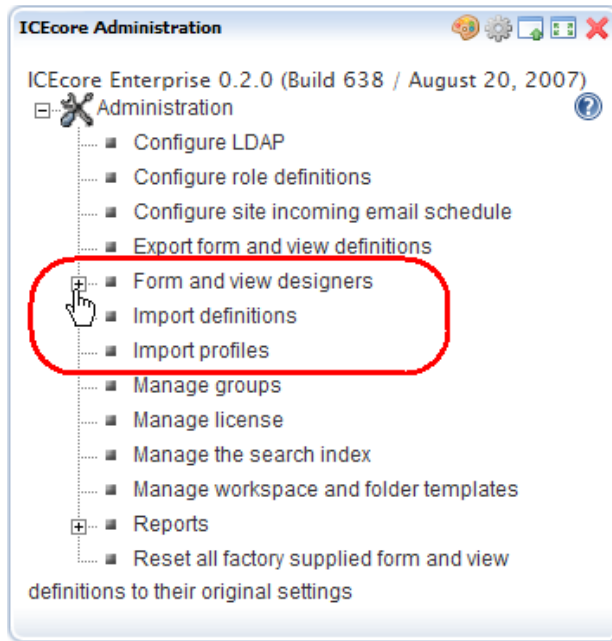
The following procedures show you how to create a custom entry with a custom form and view. The example used in these procedures show you how to create a Time Off custom entry that can be added to a team workspace so that members can alert their team about the days when they plan to be out.

The following procedures and topics are included in this section:

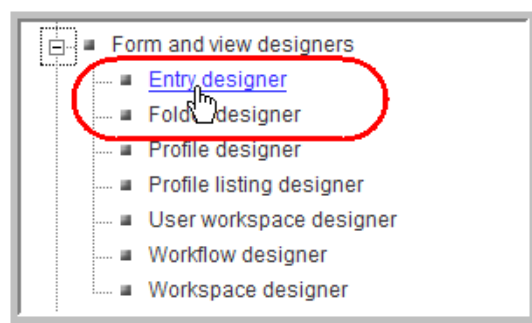
- ♦ [Section 4.1.1, “Creating the Custom Entry,” on page 71](#)
- ♦ [Section 4.1.2, “The Entry Designer Editing Window,” on page 74](#)
- ♦ [Section 4.1.3, “Creating a Custom Form for an Entry,” on page 75](#)
- ♦ [Section 4.1.4, “Creating a Custom View for an Entry,” on page 83](#)

### 4.1.1 Creating the Custom Entry

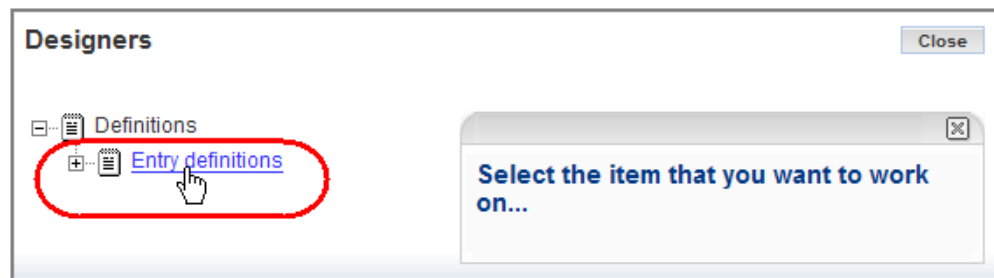
- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, click the *Add Content* link in the upper right corner. This brings up a panel of portlets along the left margin. Expand the *ICEcore* section to add more ICEcore features, such as the *ICEcore Administration* portlet.



2 Click *Entry designer*.



3 In the Designers window that appears, click *Entry definitions*.



4 On the right side of the window, click *Add a new entry definition*.





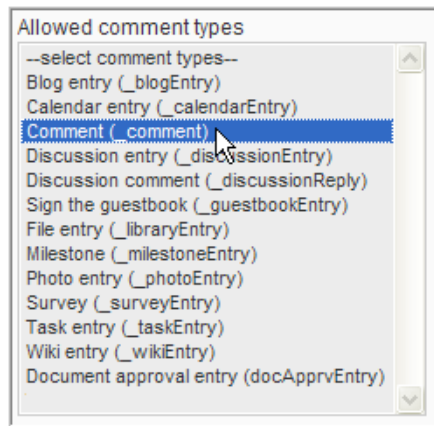
- 5 In the *Caption* field, type the name for the entry that you want to see in ICEcore.

- 6 In the *Name* field, type the name for this entry type.

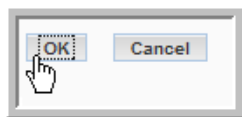
- 7 Select the family for this entry from the *Family* list box.

Select the item type that is closest to the function of the item you are creating. People can use the family type when performing filtered searches. This custom entry has an *-unspecified-* family.

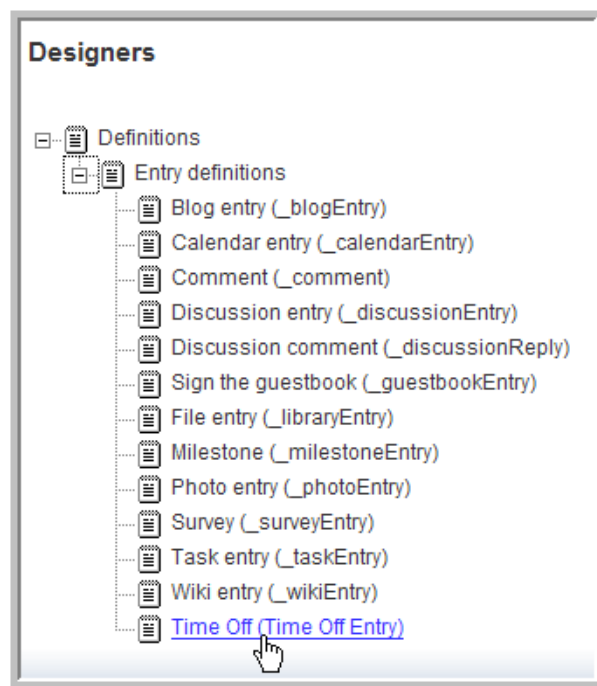
- 8 From the *Allowed comment types* list box, select the comment types you want to allow for this new custom entry (use the Ctrl key to select multiple comment types).



9 Click *OK* at the bottom of the entry form.



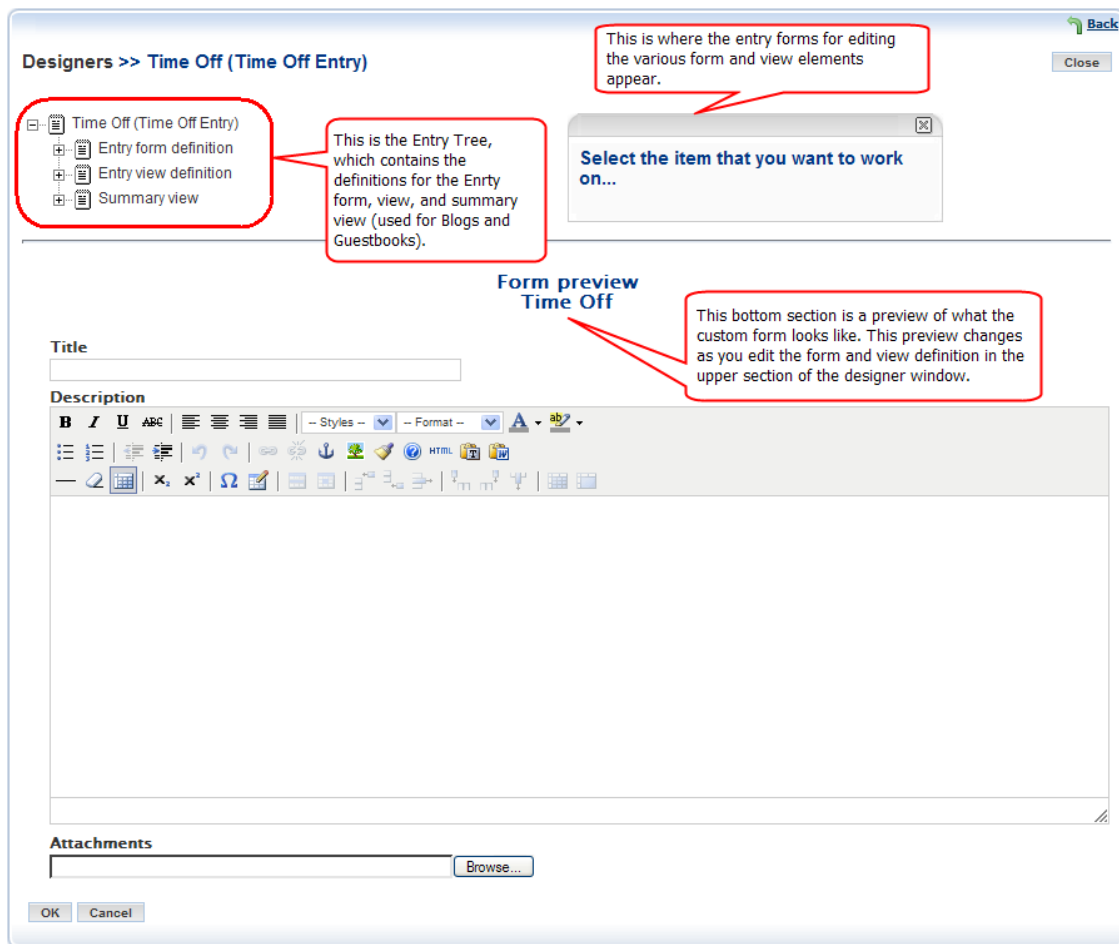
A custom entry named *Time Off Entry* now exists, which you can view under *Entry definitions* in the Entry Designer window.



### 4.1.2 The Entry Designer Editing Window

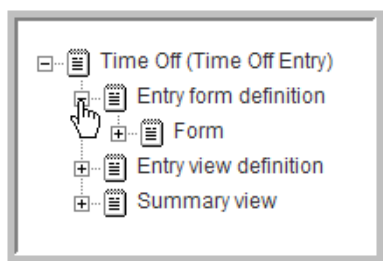
The following image shows you the Designer window when working with a specific entry.

**Figure 4-1** *Entry Designer Window*

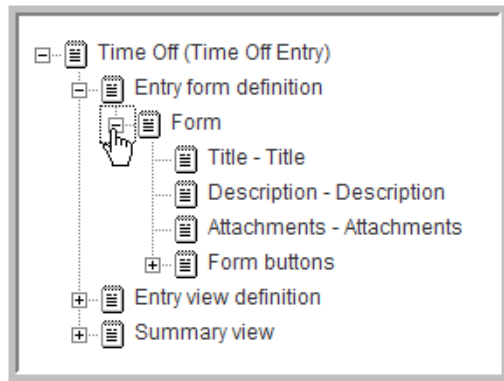


### 4.1.3 Creating a Custom Form for an Entry

- 1 Click the plus sign (+) to the left of *Entry form definition* to expand this section.

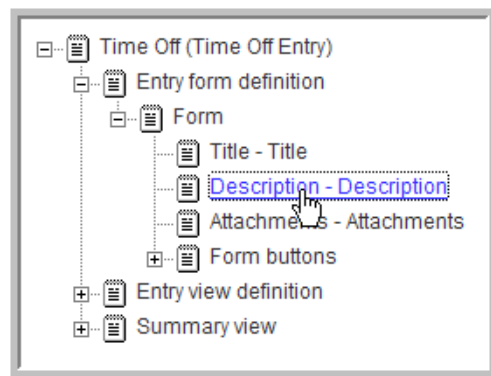


- 2 Click the plus sign (+) to the left of *Form* to expand this section and view the current elements in this form.



### 3 Delete an element:

#### 3a Click the element (*Description*).

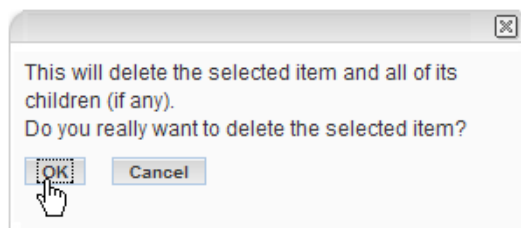


For this custom form, a simple text box element is going to be used instead of the *Description* element.

#### 3b In the options dialog that appears to the right, click the *Delete* option.

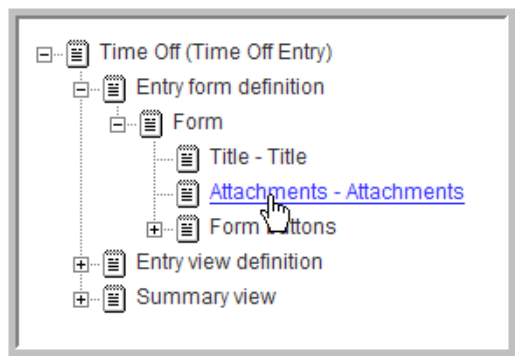


#### 3c Click *OK* to confirm that you want to delete the *Description* element.



The *Description* element is deleted and is removed from the *Entry tree* and the *Form preview area*.

- 4** Hide an element from appearing in the form view:
- 4a** Click the element you want to hide (such as *Attachments*).

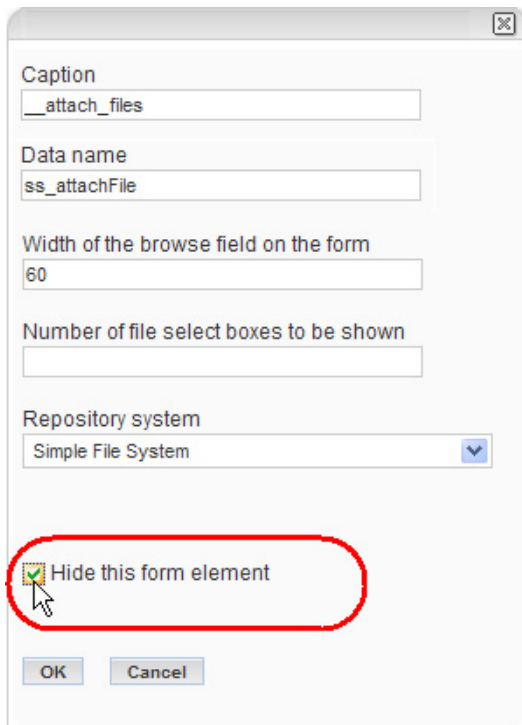


This custom entry is for entering your time off, so there is no need to attach files to these entries.

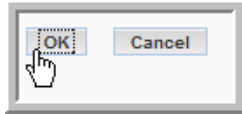
- 4b** In the options dialog, click *Modify*.



- 4c** In the *Attachments* element form that appears, select the *Hide this form element* option.



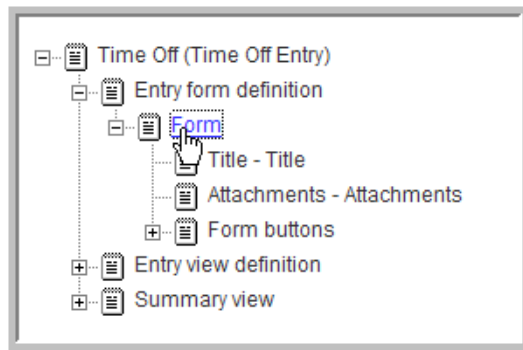
- 4d** Click *OK*.



The *Attachment* element is removed from the *Form preview* area.

**5** Add an element:

**5a** Click *Form*.

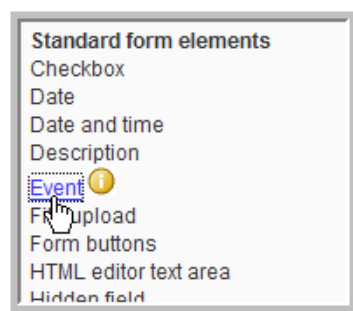


**5b** In the options dialog, click *Add*.



The *Standard Form Elements* and *Layout Options* appear to the right.

**5c** Click *Event* to add the *Event* element for entering the time off as an event with a start and end time.



**5d** Fill in the *Event* element form.

1. Type the *Caption* name (the name used in ICEcore).

2. Type the *Data Name*.

This is an internal-use database name. Names for elements in one definition must be unique. The first character must be an alphabetic character (a-z, A-Z). For the rest, legal characters are alphanumeric characters (a-z, A-Z, 0-9), hyphens (-), and underscores (\_).

3. Select the *Has a duration (start and end times)?* option.

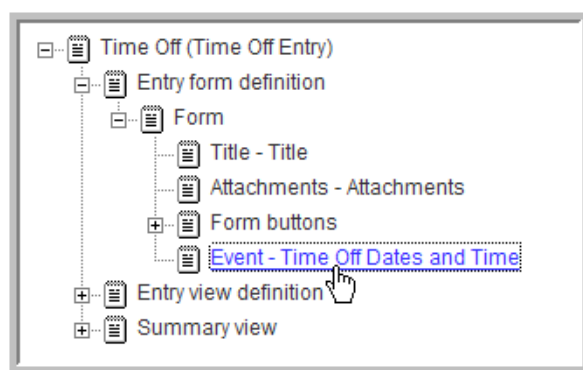
4. Select the *Required* option.

5. Click *OK*.

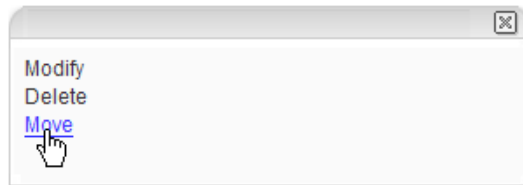
The *Time Off Dates and Time* element appears under *Form* and in the *Form preview* area at the bottom (below the other elements).

**6** (Optional) Move an element:

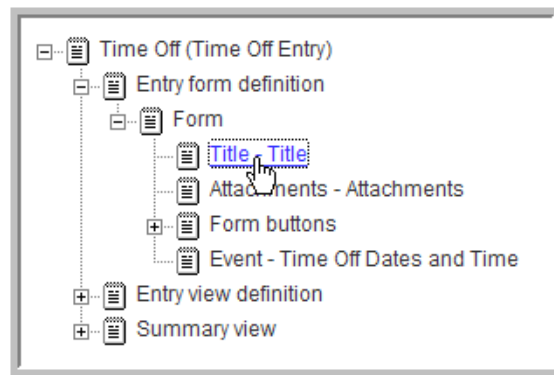
**6a** Click the *Time Off Dates and Time* element.



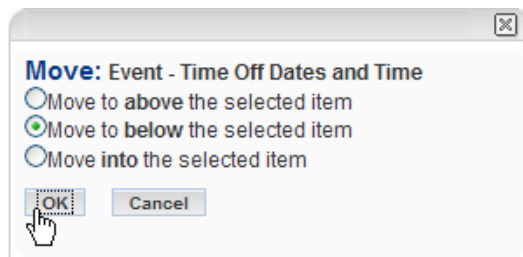
**6b** In the options dialog, click *Move*.



- 6c** If you want this element to appear below another element, click the element under *Form* that you want this element to appear under (*Title*).



- 6d** Select the *Move to below the selected item* option and click *OK*.



The *Time Off Dates and Time* element moves to below the *Title* element.

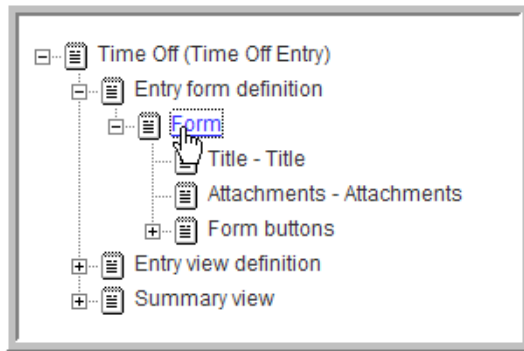
Or, if you want the element to appear above a selected element, click the *Move to above the selected item* option and click *OK*.

- 7** Add a required *Text* element named *Total Hours Off* and move it below the *Time Off Dates and Time* element.
- 8** Add a required *Text* element named *Reason for Time Off* and move it to below the *Title* element.
- 9** Add a container:

So far all the elements have been added below *Form*, which is itself a container. In this step you want to add a *Box* container below form and move the *Time Off Dates and Time* element into the box.

- 9a** Click *Form*.



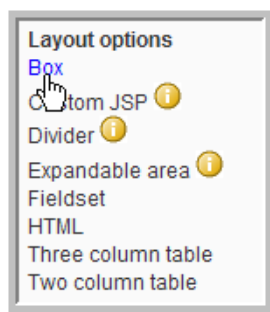


**9b** In the options dialog, click *Add*.



The *Standard Form Elements* and *Layout Options* appear to the right. Every element under *Layout Options*, except *Divider*, is a container.

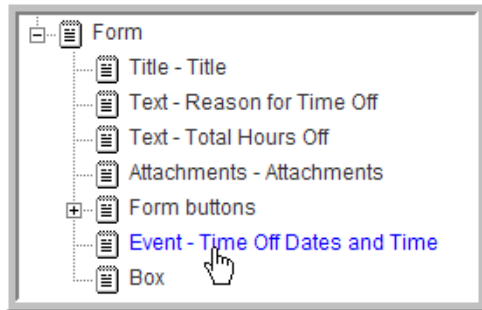
**9c** Click *Box*.



**9d** Select *Square with border* and click *OK*.



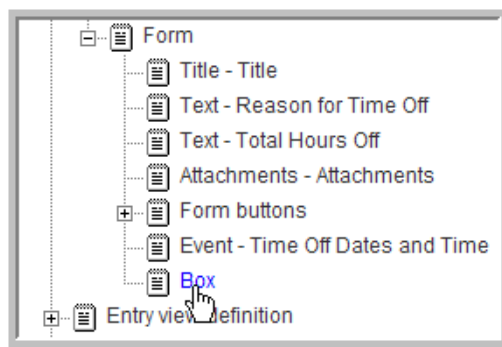
**9e** Click *Time Off Dates and Time*.



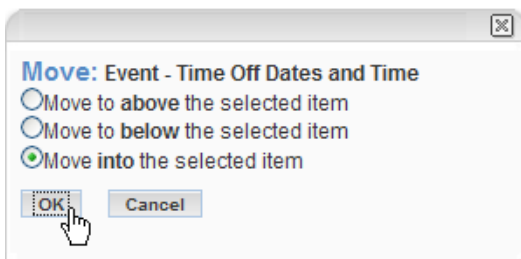
**9f** In the options dialog, click *Move*.



**9g** Click *Box*.



**9h** Select *Move into the selected item* and click *OK*.

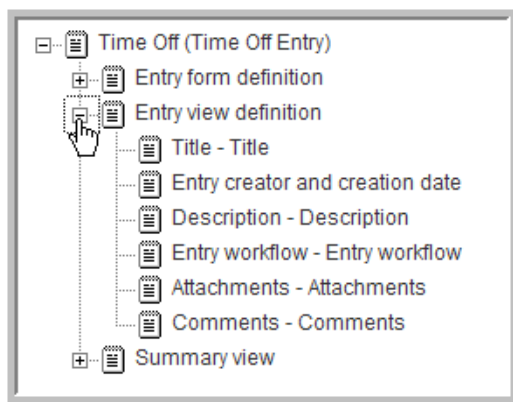


Your custom form should now look like this:

You can use the Move function to move the box above the *Total Hours Off* field.

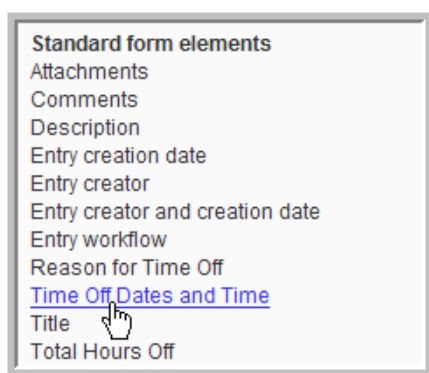
#### 4.1.4 Creating a Custom View for an Entry

- 1 Expand *Entry view definition*.



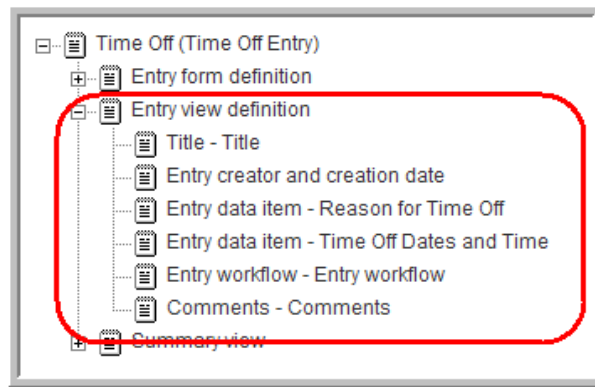
- 2 Select and delete the *Description* and *Attachments* elements.
- 3 Click *Entry view definition*, click *Add* in the option dialog, and click *Time Off Dates and Time*.

Any elements you added to the custom form appear in the list when you are adding elements to the custom view.



- 4 Click *OK*.

- 5 Click *Add* in the option dialog, click *Reason for Time Off*, then click *OK*.
  - 6 Move the *Reason for Time Off* element to below the *Entry creator and creation date* element, and move the *Time Off Dates and Time* element to below the *Reason for Time Off* element.
- Your custom view for this custom entry should now contain these elements in the following order:




---

**NOTE:** The Summary view is used for Blogs or Guestbooks. You can create a custom Summary view in the same manner as the custom view in this procedure.

---

## 4.2 Using a Custom Entry

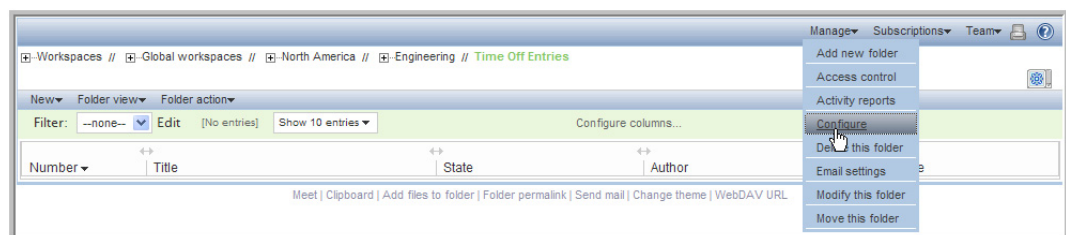
Custom entries can be assigned to any folder, but you might want to configure specific folders for some types of custom entries, depending on their purpose. For example, you might want a folder that only contains the *Time Off* custom entries.

For the *Time Off* custom entry, assume that a team plans to create a special folder that only contains these specific entry types. The following procedures show you how to add this custom entry to a team folder and configure the folder to only utilize this entry type.

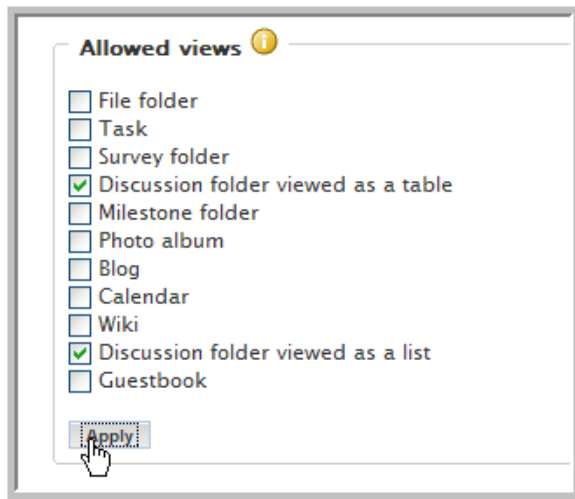
- ♦ [Section 4.2.1, “Configuring a Folder to Use Your Custom Entry,” on page 84](#)
- ♦ [Section 4.2.2, “Adding a Time Off Entry,” on page 86](#)
- ♦ [Section 4.2.3, “View the Time Off Entry,” on page 87](#)

### 4.2.1 Configuring a Folder to Use Your Custom Entry

- 1 Find the folder you want to use for the team’s Time Off entries (*Engineering > Time Off Entries* for this example procedure).
- 2 Select the *Manage > Configure* menu item.



- 3 Under *Allowed Views*, select the *Discussion folder viewed as a table* and *Discussion folder viewed as a list* options, deselect any others, then click *Apply*.

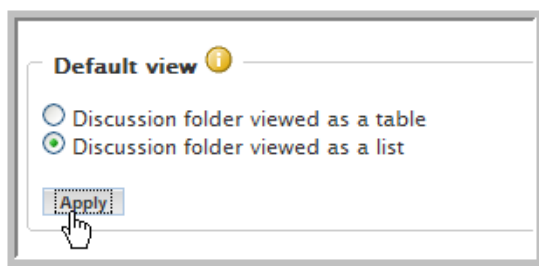


**Allowed views** ⓘ

- ☐ File folder
- ☐ Task
- ☐ Survey folder
- ☒ Discussion folder viewed as a table
- ☐ Milestone folder
- ☐ Photo album
- ☐ Blog
- ☐ Calendar
- ☐ Wiki
- ☒ Discussion folder viewed as a list
- ☐ Guestbook

Apply

- 4 Under *Default view*, select the *Discussion folder viewed as a list* option and click *Apply*.

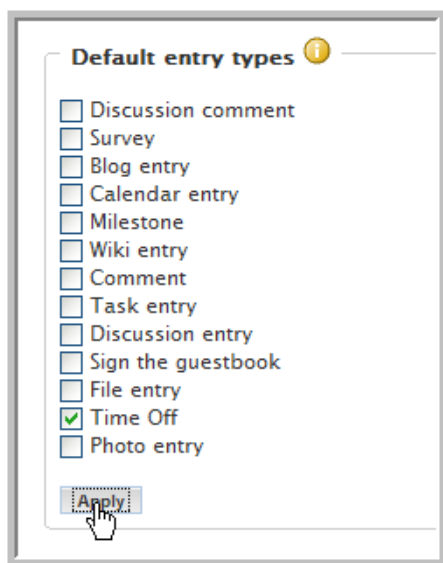


**Default view** ⓘ

- ☐ Discussion folder viewed as a table
- ☒ Discussion folder viewed as a list

Apply

- 5 Under *Default entry types*, select the *Time Off* entry type (deselect any others) and click *Apply*.



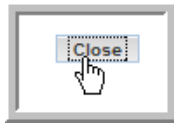
**Default entry types** ⓘ

- ☐ Discussion comment
- ☐ Survey
- ☐ Blog entry
- ☐ Calendar entry
- ☐ Milestone
- ☐ Wiki entry
- ☐ Comment
- ☐ Task entry
- ☐ Discussion entry
- ☐ Sign the guestbook
- ☐ File entry
- ☒ Time Off
- ☐ Photo entry

Apply

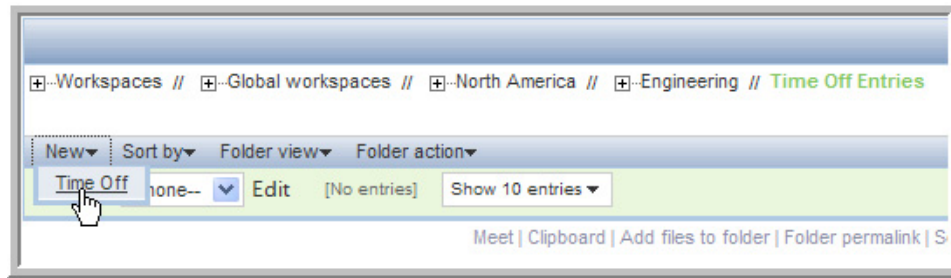
Users can now only enter *Time Off* entries in this folder.

- 6 At the top or bottom of this window, click *Close*.



## 4.2.2 Adding a Time Off Entry

- 1 Select the *New > Time Off* menu item.



*Time Off* should be the only available menu item.

- 2 Fill out the Time Off entry form.

Type in *Title*, *Reason*, select your time off period *Start* and *End* dates (time), and type the *Total Hours Off*.

A screenshot of the "Time Off" entry form. The form has the following fields: "Title" (text input with "Juston's Going to Japan"), "Reason for Time Off" (text input with "Vacation"), "Time Off Dates and Time" (a section with "Start" date "8/23/07", "End" date "8/29/07", and a checked "All day" checkbox), and "Total Hours Off" (text input with "40"). At the bottom are "OK" and "Cancel" buttons.

- 3 Click *OK*.

The new entry is added to the *Time Off* folder.

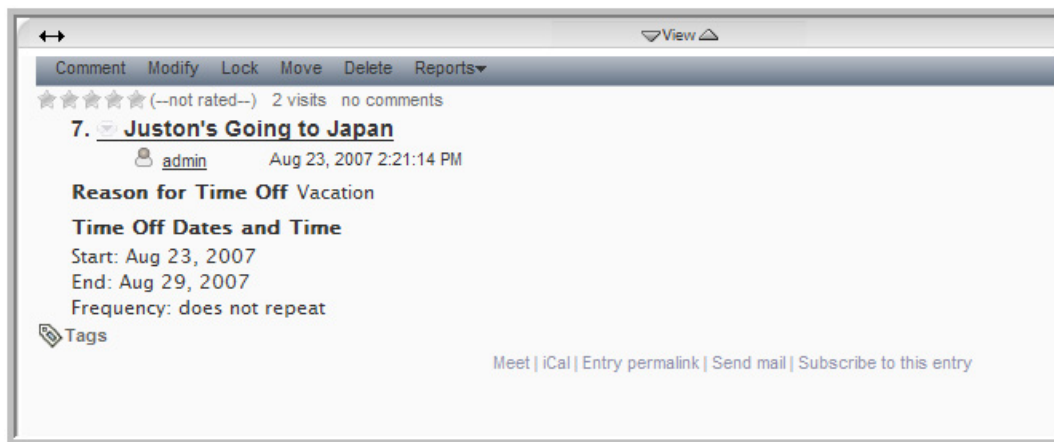


## 4.2.3 View the Time Off Entry

- 1 Click the title of the *Time Off* entry you want to view.



- 2 View the entry. You can see that it displays the elements selected for this custom view.







# Advanced Workflow

# 5

This section expands the workflow design in [“Creating a Basic Workflow Process” on page 47](#) by using ICEcore’s Advanced Workflow add-on module to more closely match the needs of a typical production-ready system (for example, using questions).

---

**NOTE:** You must purchase the Advanced Workflow add-on module to perform any transitions in your workflows other than manual transitions.

---

Despite the power of manual transitions, there are many times when a business process calls for a more complex set of conditions, such as when someone adds a reply to a question in the entry, or when a certain number of days have passed without a transaction occurring.

In many complex transition scenarios, it can be helpful to define a workflow question for your process.

This section provides two example procedures; one for adding a question to a workflow and one for configuring state transitions based upon responses to a workflow question, which appears when the entry is in a specific state. The first section walks through the workflow designer to describe all the various features.

- ♦ [Section 5.1, “Reviewing the Workflow Features,” on page 89](#)
- ♦ [Section 5.2, “Adding a Question to the Workflow,” on page 93](#)
- ♦ [Section 5.3, “Adding Transitions on Response,” on page 97](#)

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**NOTE:** A workflow question allows the workflow process to use a set of answers to determine whether and how an entry should transition.

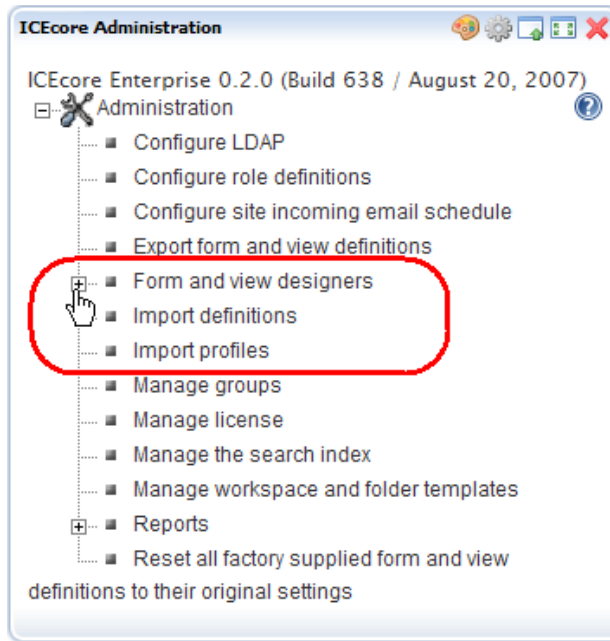
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## 5.1 Reviewing the Workflow Features

This section shows you and defines the various workflow features.

To open the workflow designer:

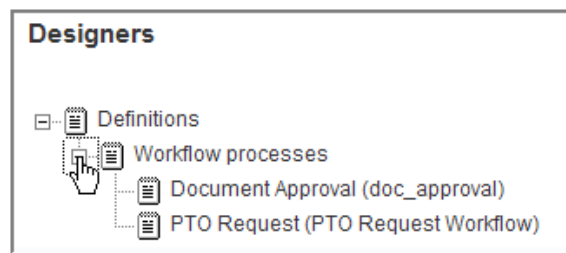
- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, See [“Adding the ICEcore Administration Portlet to Your Home Page” on page 14](#).



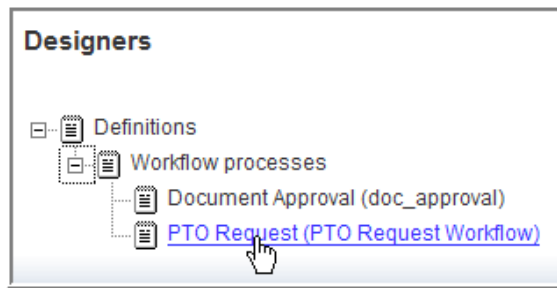
2 Click *Workflow designer*.



3 Expand *Workflow processes*.



4 Click *PTO Request*.



This workflow process is created in [“Creating a Workflow” on page 47](#).

Now that you are viewing the workflow, we want to walk through all the available features and options in a workflow.

**Figure 5-1** Workflow Designer



Click *Workflow process* to view your options (they appear in a dialog to the right of the designer tree):

- ◆ *Add*: Allows you to add a new *State* (see [“Adding States to a Workflow” on page 49](#)) or a *Parallel workflow thread* if you have Advanced Workflow.

States are created at the *Workflow process* level. If you create states specifically for use in your parallel workflow threads, use the *Move* feature to move these states into your parallel workflow threads.

- ◆ *Modify*: Allows you to set the initial and end states for your workflow.
- ◆ *Move*: Allows you to move a *Parallel workflow thread*. You can not move the *Workflow process*.

Click on a state to view your options:

- ◆ *Add*: Allows you to add features to this *State*:
  - ◆ *Access controls*: Allows you to set the user access controls for this state.
  - ◆ *On entry*: Allows you to add on entry features for this state.
  - ◆ *On exit*: Allows you to add on exit features for this state.
  - ◆ *Workflow question*: Allows you to add questions for this *State*. See [“Adding a Question to the Workflow” on page 93](#).
- ◆ *Modify*: Allows you to you to modify the *State*. See [“Adding States to a Workflow” on page 49](#)

- ♦ *Delete*: Allows you to delete the *State*.
- ♦ *Move*: Allows you to move the *State*.

Expand the *Review* state:

**Figure 5-2** Workflow State Features



Click *Transitions*, then *Add* to review the types of transitions you can add to your workflow:

- ♦ *Manual transition*: This is the only transition type in basic workflow. The transition creates a workflow drop-down list in the entry that is used to manually transition the entry to a new state.
- ♦ *Transition after time elapsed*: This allows you to automatically transition an entry to a new state after a designated time period.
- ♦ *Transition on a variable*: This allows you to transition an entry to a new state based on a variable's value. You can create and change variable values using the *On entry* and *On exit* features.
- ♦ *Transition on comment*: This allows you to transition an entry to a new state when a comment is added to the entry (this is useful for review purposes).
- ♦ *Transition on entry data values*: This allows you to transition an entry to a new state based on the value that a user specifies for a custom element in the entry.

For example:

- ♦ If you wanted to assign an entry to a specific state based on a value the user selects, you define a custom element with multiple values from which a user selects (drop-down list on the form). Map each of these values to specific states in the initial workflow state using the *Transition on entry data values* feature. This feature is useful for assigning help tickets in a help desk, assigning entries to the appropriate review contact, etc.
- ♦ If you wanted to transition an entry at a specific time, you could transition the entry based on a custom date element.
- ♦ *Transition on modify*: This allows you to transition an entry to a new state when it is modified (this is useful for review purposes).
- ♦ *Transition on response*: This allows you to transition an entry to a new state based on a response to a question in the entry. Map each possible answer to a workflow question to one of

these transitions using the *Data name* of for each *Workflow response*. See [“Adding Transitions on Response” on page 97](#).

- ♦ *Wait for parallel thread(s) to end*: This allows you to transition an entry to a new state when one or more specified parallel workflows end.

Click *Access controls*, then *Add* to review the types of access controls you can add to each state (only use these features to limit access):

- ♦ *Read access*: Grants read access to an entry in this state to the users and groups you specify.
- ♦ *Transition into this state*: Grants the ability to move an entry into this state to the users and groups you specify. This state only shows up in the manual transitions drop-down list in an entry if the user has the appropriate access rights.
- ♦ *Transition out of this state*: Grants the ability to move an entry out of this state to the users and groups you specify.
- ♦ *Modify access*: Grants modify access to an entry in this state to the users and groups you specify.

For more information, see [“Setting Access Controls” on page 59](#).

Click *Workflow question* > *Add* > *Workflow response* to add a response to a workflow question. See [“Adding a Question to the Workflow” on page 93](#).

Click *On entry* or *On exit*, then *Add* to review the types of on entry and exit features you can add to each state:

- ♦ *Move entry*: This allows you to move an entry to a new location in ICEcore when it transitions into or out of a specific state.
- ♦ *Notifications*: Allows you to notify specific users or groups about a specific entry when it enters or exits a specific state.
- ♦ *Start a parallel workflow thread*: Allows you to start a parallel workflow when an entry enters or exits a specific state.
- ♦ *Stop a workflow thread*: Allows you to stop a parallel workflow when an entry enters or exits a specific state.
- ♦ *Workflow variable*: Allows you to create or change the value of a variable when an entry enters or exits a specific state. This is used with the *Transition on a variable* feature to create automated workflows.

## 5.2 Adding a Question to the Workflow

---

**NOTE:** A question can be specific to one state. As another option, you can define a global question, which you can then associate with any number of states; this is helpful when multiple states require the same question and answer set. Each state can have only one associated question.

---

For example, consider the following table:

**Table 5-1** PTO Request Process

Condition	Causes the work to transition to...
The employee enters a PTO Request.	Submit
The manager indicates receipt.	Review
The manager approves the request.	Approve
The manager denies the request.	Deny
HR has entered the approved vacation	Record

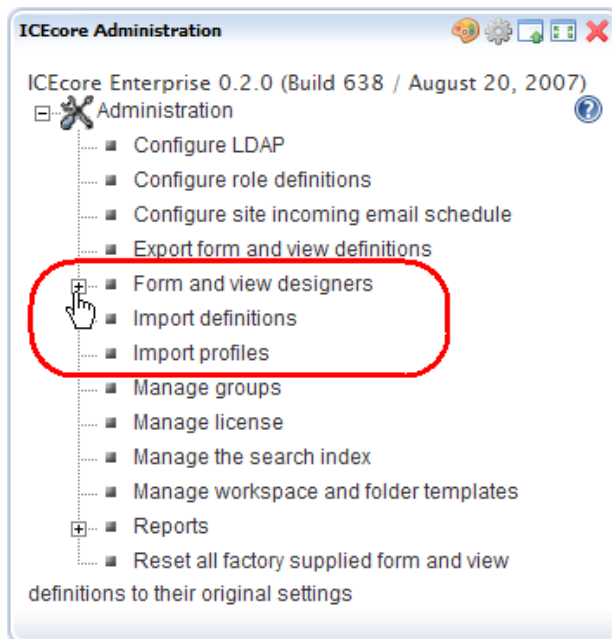
When reviewing the conditions table, look for conditions that can be automated. For example, the third and fourth items are excellent examples of conditions that can be determined automatically by using workflow tools.

For example, you can alter the implementation of the *PTO Request* workflow, so that the manager's answer to a workflow question determines if a request is *Approved* or *Denied*. Given the design of the *PTO Request* workflow, the workflow question should appear to the manager in the *Review* state.

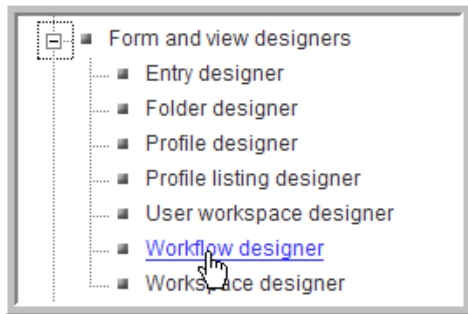
To add a Workflow Question and Responses to the Review State:

**NOTE:** The *Transition out of this state* access control determines who can view a Workflow question in a given state (see [Section 3.2.3, "Setting Access Rights,"](#) on page 61).

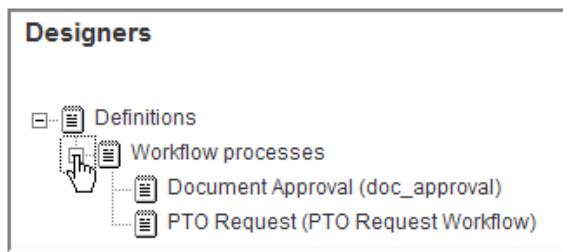
- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, See ["Adding the ICEcore Administration Portlet to Your Home Page"](#) on page 14.



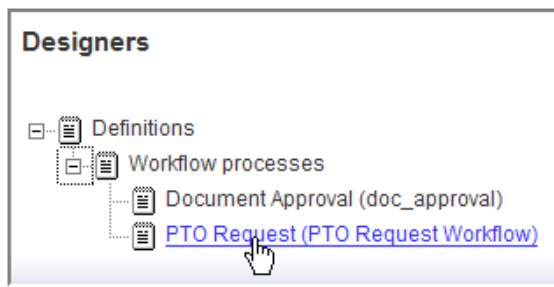
- 2 Click *Workflow designer*.



3 Expand *Workflow processes*.



4 Click *PTO Request*.



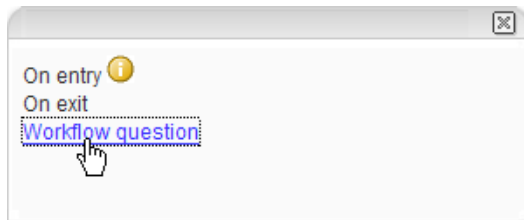
5 Expand *Workflow process* and click *State - Review*.



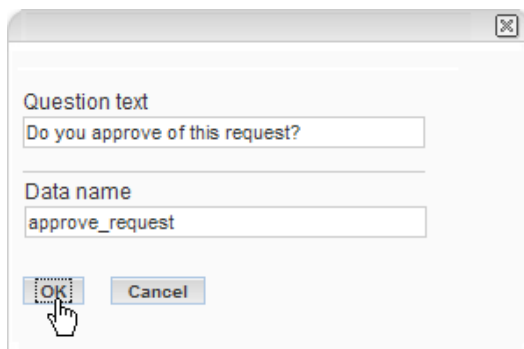
6 In the options dialog on the right, click *Add*.



7 Click *Workflow question*.

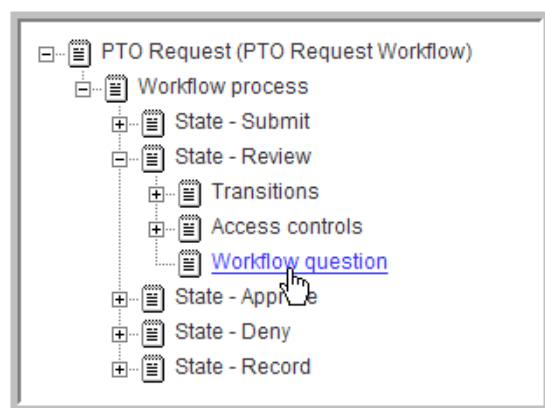


8 Type the *Question text* (Do you approve of this request?) and the *Data name* (approve\_request), then click *OK*.



The *Workflow question* process appears below the *Review* state.

9 Click *Workflow question*.



10 Click *Add*.

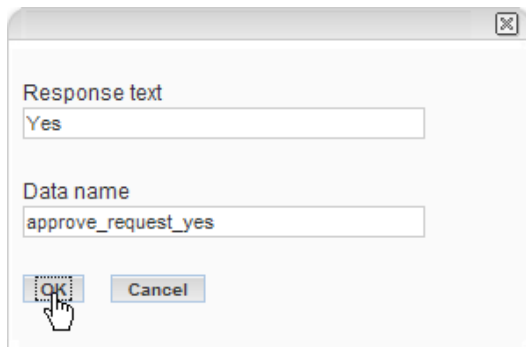




11 Click *Workflow response*.



12 Type the *Data name* (approve\_request\_yes) and the *Response text* (Yes), then click *OK*.



The *Workflow response* is added below the *Workflow question*.

13 Repeat [Step 9](#) through [Step 12](#) to add a “No” response to this *Workflow question*.

## 5.3 Adding Transitions on Response

---

**IMPORTANT:** For the entry to transition to another state based on participants’ responses to the workflow questions, the responses must be associated with the new non-manual response transitions.

---

The following sections describe how to add response transitions and remove the manual transitions:

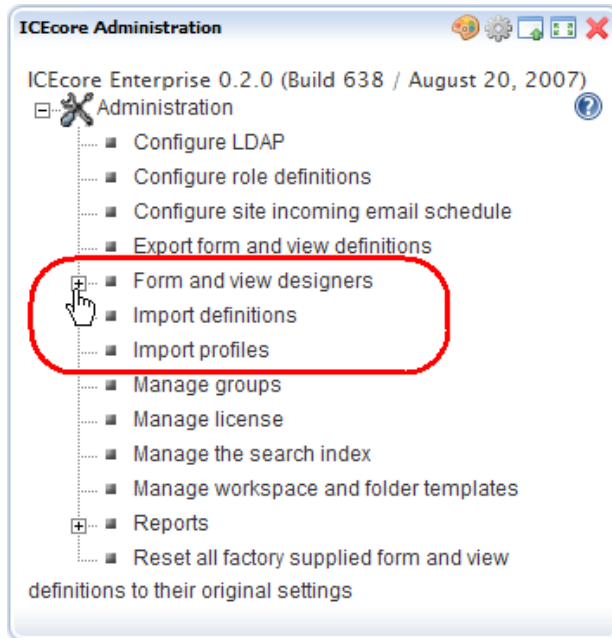
- ♦ [Section 5.3.1, “Adding the Response Transitions,” on page 97](#)
- ♦ [Section 5.3.2, “Removing Older Transitions,” on page 100](#)

### 5.3.1 Adding the Response Transitions

The question, “Do you approve of this request?” has two possible responses. To implement our design, both of the responses must have an associated transition.

**NOTE:** The *Transition out of this state* access control determines who can view a Workflow question in a given state (see [Section 3.2.3, “Setting Access Rights,”](#) on page 61).

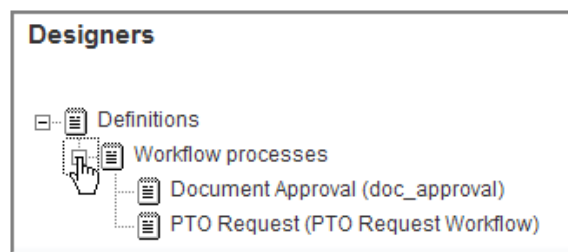
- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, See [“Adding the ICEcore Administration Portlet to Your Home Page”](#) on page 14.



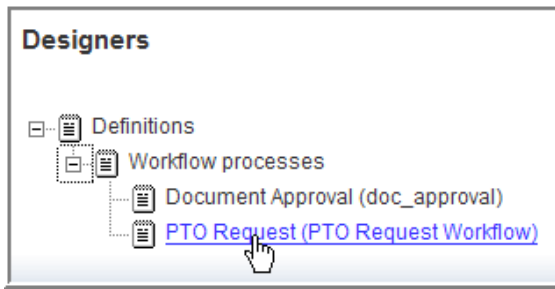
- 2 Click *Workflow designer*.



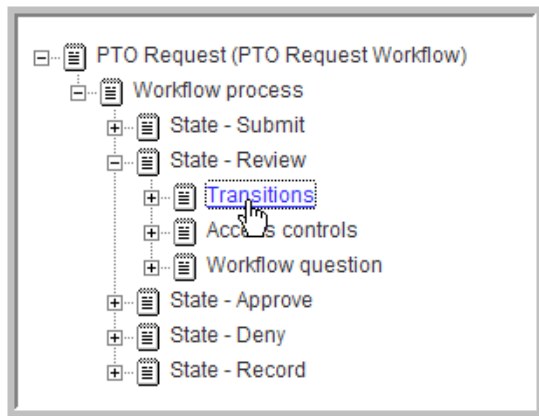
- 3 Expand *Workflow processes*.



4 Click *PTO Request*.



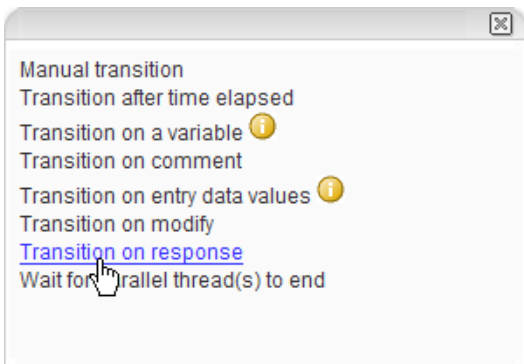
5 Expand *Workflow process*, expand *State - Review*, then click *Transitions*.



6 Click *Add*.

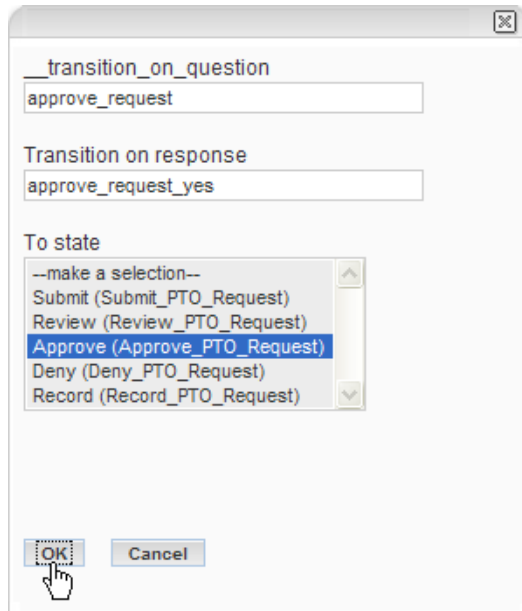


7 Click *Transition on response*.

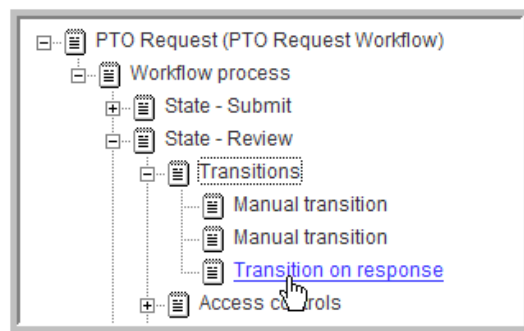


Only the Manual transition option is available for the basic workflow. All other transition types are part of the Advanced Workflow add-on module.

- 8 In the `__transition_on_question` field, type in the *Data name* for your *Workflow question* (`approve_request`).
- 9 In the *Transition on response field*, type the *Data name* for your *Workflow response* (`approve_request_yes`).
- 10 In the *To State* drop-down list, select the state to which you are transitioning (`Approve`).
- 11 Click *OK*.



The new *Transition on response* process is added under *Transitions*.

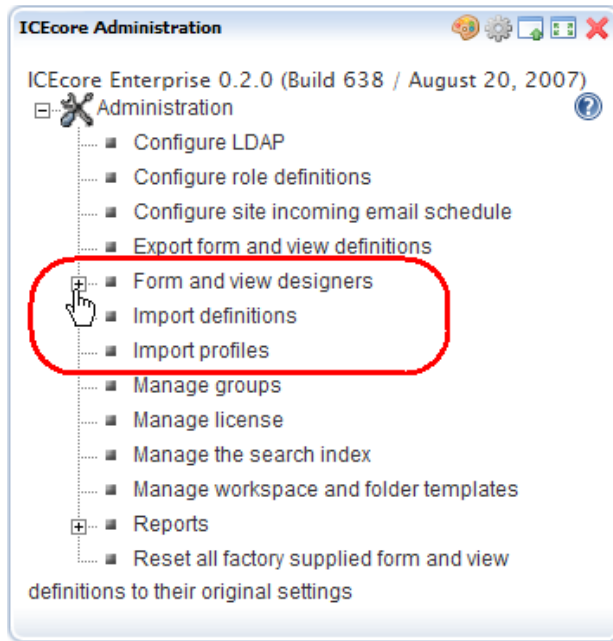


- 12 Repeat this procedure to add a *Transition on response* for the “No” *Workflow response* (`approve_request_no`) that transitions to the *Deny* state.

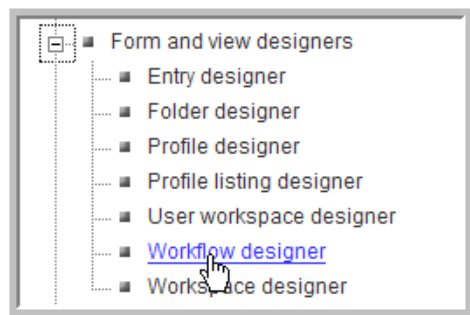
### 5.3.2 Removing Older Transitions

Creating a *Transition on response* renders the existing manual transitions unnecessary.

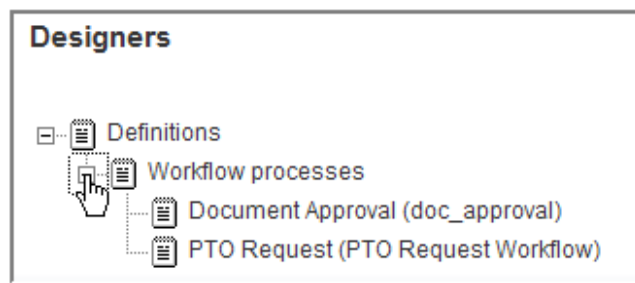
- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, See [“Adding the ICEcore Administration Portlet to Your Home Page” on page 14.](#)



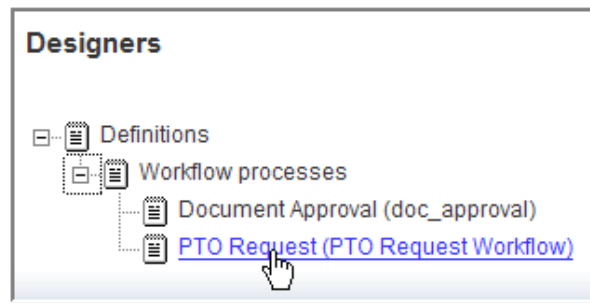
2 Click *Workflow designer*.



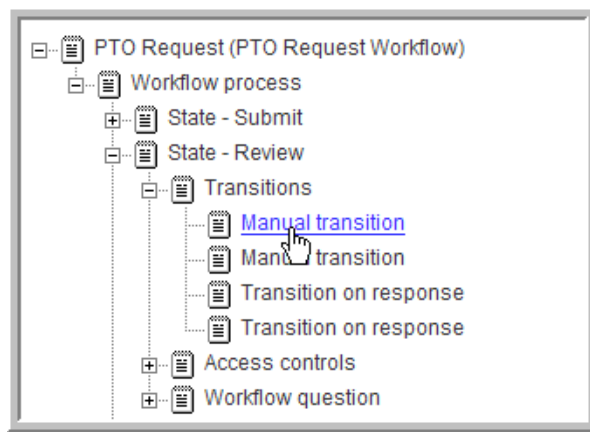
3 Expand *Workflow processes*.



4 Click *PTO Request*.



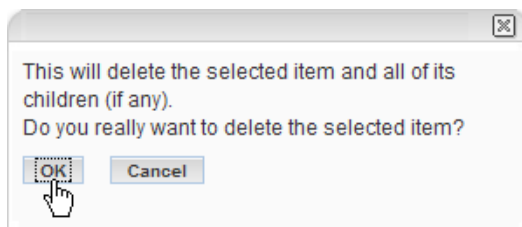
- 5 Expand *Workflow process*, expand *State - Review*, expand *Transitions*, then click the first *Manual transition*.



- 6 In the options dialog on the right, click *Delete*.






- 7 In the confirmation dialog that appears, click *OK* to delete the *Manual transition*.



- 8 Repeat this procedure to delete the remaining *Manual transition* for the *Review* state.

The Workflow section of an entry in the *Review* state now shows the question and answers for those users with the correct access rights (*Managers*).

Workflow		
Process	State	Action
PTO Request	Review	<div>Do you approve of this request?</div> <div><div>Yes</div><div>No</div></div> <div><div>OK</div></div>
<div>Attachments</div> <div><div></div><div></div><div></div></div>		



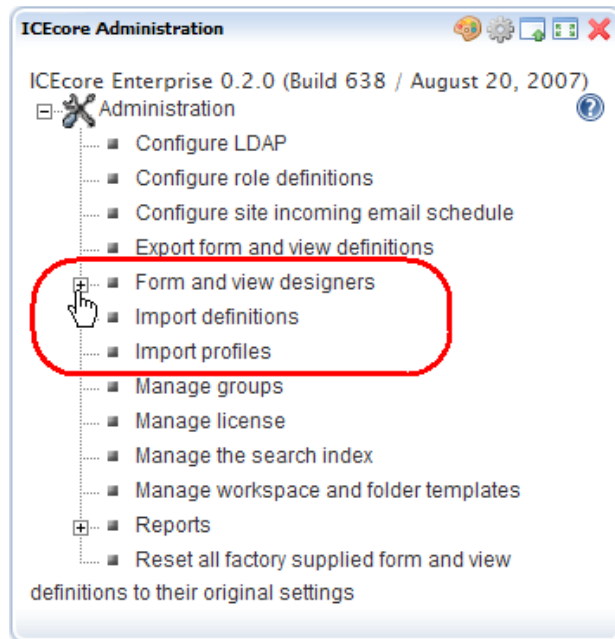


# The Profile Designer

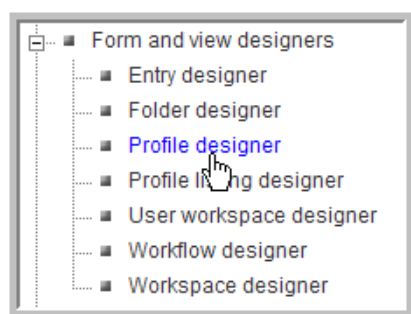
# 6

You use the *Profile designer* to edit the business card that appears on every user's workspace. The following procedure shows you how to edit the business cards layout to tailor it for your specific company.

- 1 From the *ICEcore Administration* portlet on the initial Liferay portal window, click the plus sign (+) to the left of *Form and view designers* to expand this section and view the available designers. To add the *ICEcore Administration* portlet to the Liferay portal window, See [“Adding the ICEcore Administration Portlet to Your Home Page” on page 14.](#)



- 2 Click *Profile designer*.

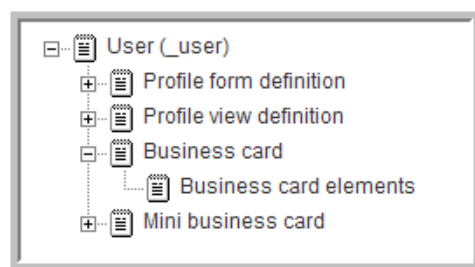


- 3 Expand *Profile view* and click *User*.



You see the following for the user business card.

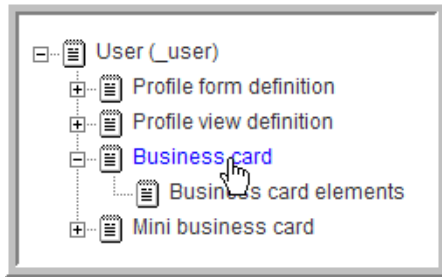
- 4 To edit the layout of the business card, expand *Business card*.



Any element you add to *Business card* appears below the picture on the business card. Any element you add to the *Business card elements* appears to the right of the picture on the business card.

- 5 Add the user's first name below the picture:

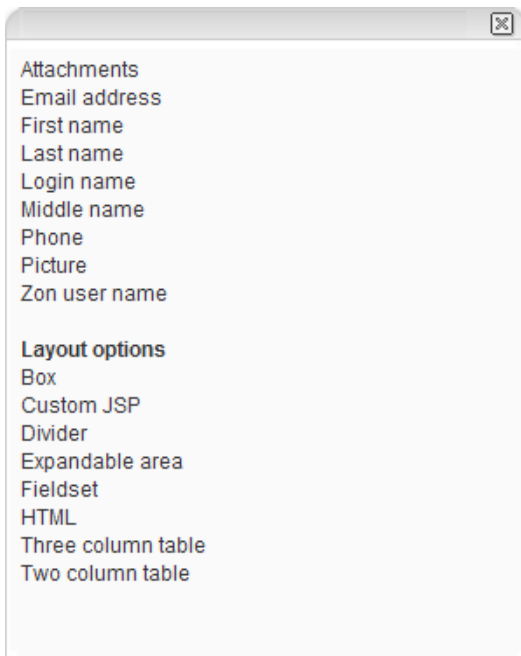
**5a** Click *Business card*.



**5b** Click *Add*.

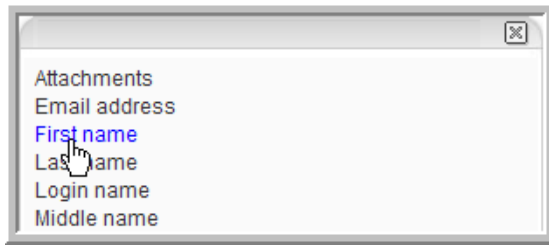


The following elements are available:

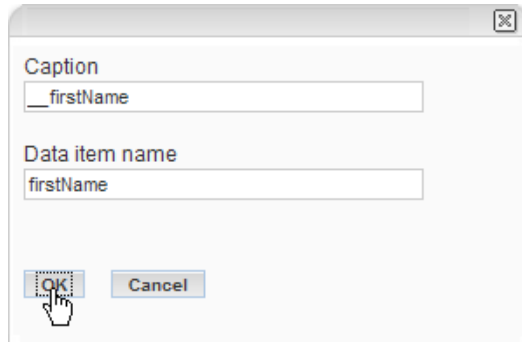


The upper section has elements for the business card; some are already included in the *Business card elements*. The Layout options allow you to add custom elements (including additional containers). See [“Creating a Custom Form for an Entry” on page 75](#).

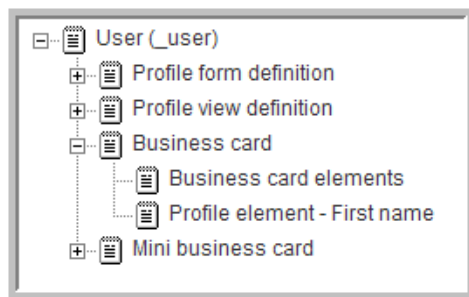
**5c** Click *First name*.



**5d** Click *OK* in the dialog that appears.

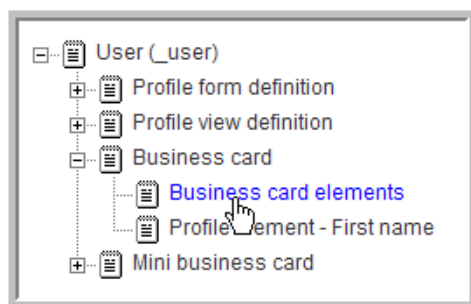


*Profile element - First name* appears below the business card.



**6** Edit *Business card elements*:

**6a** Click *Business card elements*.

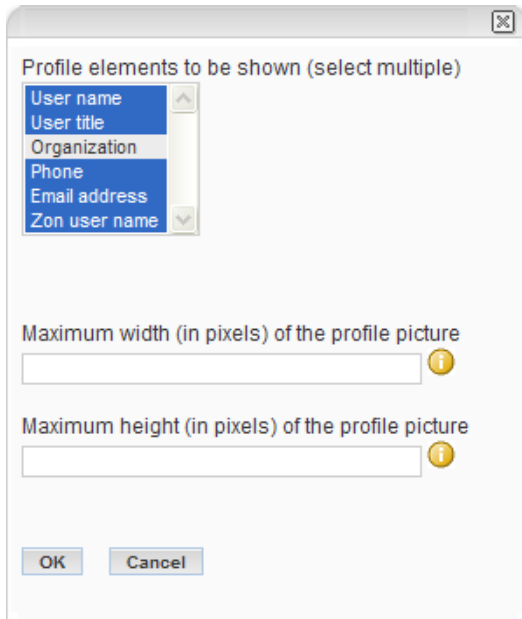


You can perform the same steps to add a new element below the *Business card elements*, which would appear to the right of the picture on the business card, or you can edit the *Business card elements* to select or deselect the elements that are already in the *Business card elements*.

**6b** Click *Modify*.



The dialog for *Business card elements* appears.



**6c** Select the profile elements you want to appear to the right of the user's picture on the business card (use the Shift or Ctrl keys to select multiple elements).

For this example, select all elements.

The Maximum width and Maximum height fields allow you to limit the size of the users' pictures on their business cards. The graphic is scaled to fit within the maximum width and height that you specify, without distorting the picture (the aspect ratio is maintained).

**6d** Click *OK*.

You might also need to add the *Organization* element in the *Profile form definition* so that users can specify their organizations when they modify their profiles. This is true for any new elements you add to the business card (you need to add the new elements to the *Profile form definition* so that users can input values when they modify their profiles).

**7** Go to a user's workspace and view the changes. In this example, the *Organization* element has been given a value for the user.



**John Waters** (jwaters)  
Organization **ACME**  
Phone **123-123-1234**  
Email address **jwaters@acme.com**  
Zon name **jwaters**

**First name:** John

# Glossary

**access control**

The tool that determines who has the right to perform which tasks in which places. See also [role-based access control](#).

**accessibility mode**

An optimized user interface that facilitates use by assistive devices, such as auditory readers.

**accessory**

A section located at the top of a workspace or folder page that provides a summary view, most likely of the information contained within the item. For example, an accessory can show all of the entries within a folder that are authored by someone designated as a subject-matter expert.

**advanced search**

Extra search tools that allow you to specify more specific criteria (such as the author of an item, or restricting the search to a portion of the workspace tree).

**alias**

See [e-mail alias](#).

**attachment**

A file attached to an [entry](#).

**author**

The person who created an entry.

**blog**

A folder that contains a chronological listing of journal entries.

**blog archive**

A feature of blog folders that allows you to see entries authored in a specific month.

**buddy list**

A list of people whose [presence](#) you want to check and whom you contact frequently.

**calendar**

A folder containing entries for scheduled appointments.

**clipboard**

A tool that gathers people's names. Later, when using a tool that requires names, you can take them from your clipboard.

**comment**

A reply to an [entry](#).

**community tag**

A keyword **tag** applied to an item by the owner of a workspace or folder. Other users of the workspace or folder can perform searches based on community tags.

**configuration**

A set of tools that alter the way item content is presented. There are many types of configuration, ranging from setting allowable **views** for an item, selecting a color scheme, creating custom entries, and enabling workflow processes.

**default view**

The **configuration** of the information you see when you first view a workspace or folder. Some items might be configured to allow alternate **views**, which you can select.

**definition**

A set of elements for both the **form** and **view** of a workspace, folder, or entry.

**designer**

A tool used to create **definitions** or **workflow processes**.

**discussion**

A folder whose entries are discussion topics and comments about those topics.

**e-mail alias**

An alternative e-mail address for an e-mail account. To enable e-mail posting into a folder, you must provide an e-mail alias for the one account used to post into all folders in your ICEcore installation. Consult with your ICEcore site administrator for further assistance; site administrators, consult with the IT person responsible for creating e-mail accounts to create new aliases.

**e-mail notification**

An e-mail message that ICEcore sends indicating new or changed entries in a folder or subfolder.

**entry**

An item in a folder.

**favorites panel**

A tool used to save links to workspaces and folders most important to you, providing a method of accessing these places quickly.

**file folder**

A folder whose entries are configured to highlight an attached file and to facilitate file management.

**filter**

A setting that limits a **folder** listing to only the entries that match the filter's search criteria. For example, you can create a filter that shows only the contents of a folder authored by you or that were created past a certain date.

**folder**

A container for **entries** and other folders. Each folder has a type, such as **blog**, **wiki**, or **calendar**, that determines its appearance and features.



**form**

An HTML form used to create a workspace, folder, or entry.

**global workspace**

A **workspace** that, by default, allows everyone in your organization to participate.

**guestbook**

A **folder** or **accessory** whose entries indicate who has visited the place.

**help mode**

A dimmed page and information icons (“i”). When you click on an information icon, ICEcore presents a panel of information about that section of the page.

**inherit**

A process by which a workspace or folder automatically uses **configuration** settings from its **parent**.

**instant message (IM)**

A quick communication between teammates, using the Conferencing messaging software.

**Liferay**

The **portal** software within which ICEcore runs by default.

**meeting**

An online communication by teammates, using the Conferencing messaging software. Conferencing provides tools that assist with online meetings, such as people designated as running the meeting, a way for participants to “raise their hands,” and a whiteboard.

**milestone**

A **folder** that, by default, summarizes the status of tasks in a task folder as they relate to meeting **project** milestones.

**navigator**

A set of tools that you can use to go anyplace within ICEcore you want to go. The tools include “**My workspace**,” “**Favorites**,” viewing your **teams**, search, **Help**, and a **workspace tree**.

**owner**

The person who created the workspace, folder, or entry.

**parallel workflow process**

A set of **state** transitions that happen at the same time as other state transitions. A state in the main thread initiates the parallel process, and a state later in the main thread can wait for the completion of the parallel thread.

**parent**

A workspace or folder that contains another workspace or folder. The item contained within the parent is sometimes called its child.

**participant**

An **access role** that, generally, by default, allows people to author entries in a folder.

**permalink**

A Web address (URL) for a ICEcore workspace, folder, or entry that you can copy, paste, and send to teammates so that they can access a page directly by specifying the address in their web browsers.

**personal tag**

A keyword **tag** that you apply to an item, and that only you can see and use.

**personal workspace**

A workspace that serves as a person's home page in ICEcore, including contact information, pictures, a personal **blog**, and more.

**photo gallery**

A **folder** whose entries are pictures.

**portal page**

A Web page that can run various applications in sections of its page. For example, Google and Yahoo use portal pages. Sections within a portal page can display the local time, the local weather, your favorite stock quotes, and more.

**portlet**

A section on a portal page. ICEcore runs within portlets.

**presence**

A person's online status (online, away from the computer, offline, status unknown), represented in ICEcore by people icons of certain colors.

**project-management workspace**

A **workspace** configured to facilitate the tracking of tasks and completion of complex project work.

**role-based access control**

A mechanism that controls access by assigning people and groups to roles, and the roles determine the rights assigned to those people. See the online help for a list of ICEcore default role definitions.

**site administrator**

The person or people who have the right to perform any task in the ICEcore installation.

**state**

See **workflow state**.

**subscription**

A way to track new or changed items in ICEcore.

**tag**

A keyword that anyone can apply to a workspace, folder, or entry to make it easier to find. See also **personal tag** and **community tag**.

**task**

A **folder** that, by default, contains entries that track progress in regard to completing an assignment.

**team**

An **access role** that, by default, allows people to **participate** in a workspace or folder, to do some minor administrative tasks, and to communicate easily with each other.

**team workspace**

A **workspace** that restricts participation to teammates.

**template**

A set of default configuration settings used to create a new workspace or folder. A template includes at least one **definition**, **access control**, and a possible hierarchy of defined items.

**type to find**

A ICEcore tool that uses the characters you have typed so far to present a list of possible choices. This tool is active for text boxes whose values are within a defined set: for example, people, places (workspaces and folders), and tags.

**view**

A presentation of an item's content. For example, you can view a discussion folder in either a list or table format. By default, most folders use one view (calendar folders use a calendar view, blog folders use a blog view, and so on).

**visitor**

An **access role** that, by default, allows people to read entries and make **comments** on them, but not create new entries.

**WebDAV**

The Web Distributed Authoring and Versioning protocol. If your system provides a tool that uses this protocol, it allows you to manage ICEcore file and folder entries by using the WebDAV window.

**wiki**

A **folder** whose entries are authored by all **participants**.

**workflow**

An online representation of a business process (for example, document review, paid time-off requests, document sign-off, and so on). An **entry** can have an associated workflow process, which places the entry into various workflow states.

**workflow state**

A status label for an **entry** in a workflow process. A state determines who has the right to work with an entry (including who can see it), who needs to be notified, who needs to perform the next task, and which subsequent states are possible.

**workspace**

A container for folders and other workspaces.

**workspace tree**

A tool that allows you to navigate the hierarchy of workspaces, sub-workspaces, **folders**, and subfolders within ICEcore.