



Extending Profile and User Directory

Presenter's Name

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Agenda

- Extending User Profiles
- Dynamo User Directory

Learning Objectives

At the end of this lesson you should be able to:

- Extend a user profile to capture custom attributes
- View the combined user profile XML with OOTB and custom attributes
- Use Dynamo User Directory to represent customers with different functions
- Learn about the Dynamo User Directory architecture
- Secure entire web site, specific pages or parts of a page.

Section 1:

Extending User Profiles



ProfileAdapterRepository

- ProfileAdapterRepository is the default SQL profile repository of ATG.
- It is a session scoped nucleus component /atg/userprofiling/ProfileAdapterRepository .
- The repository definition file can be found at <CONFIGPATH>/atg/userprofiling/userProfile.xml .
- The definitionFile property of the Profile Adapter Repository points to this repository definition file.
- By using standard repository definition file layering using xml file combination, you can override and/or extend the profile definition to suit your needs.

Extending User Profiles

- Defining a profile to accurately capture user information is an important step in the process of personalization.
- ATG ships with standard profile properties.
- If you do not need a provided property, you can either ignore it or remove it from the definition.
- If you need more properties, you can extend the profile definition to include your custom fields.
- The process of extending requires:
 - Adding appropriate columns to the database table,
 - Adding a reference to that column in the profile repository definition file.

A Use Case For Extending Profile

- Your business users would like you to capture the region where the users will be coming from.
- This field will be an enumerated type with:
 - Northeast – Region 1,
 - Midwest – Region 2,
 - South – Region 3,
 - West – Region 4.
- They would also like to add a string property called school that captures the users school affiliation, if any.
- The merchandisers plan to use these fields to personalize the website.

Step 1: Create a New Table

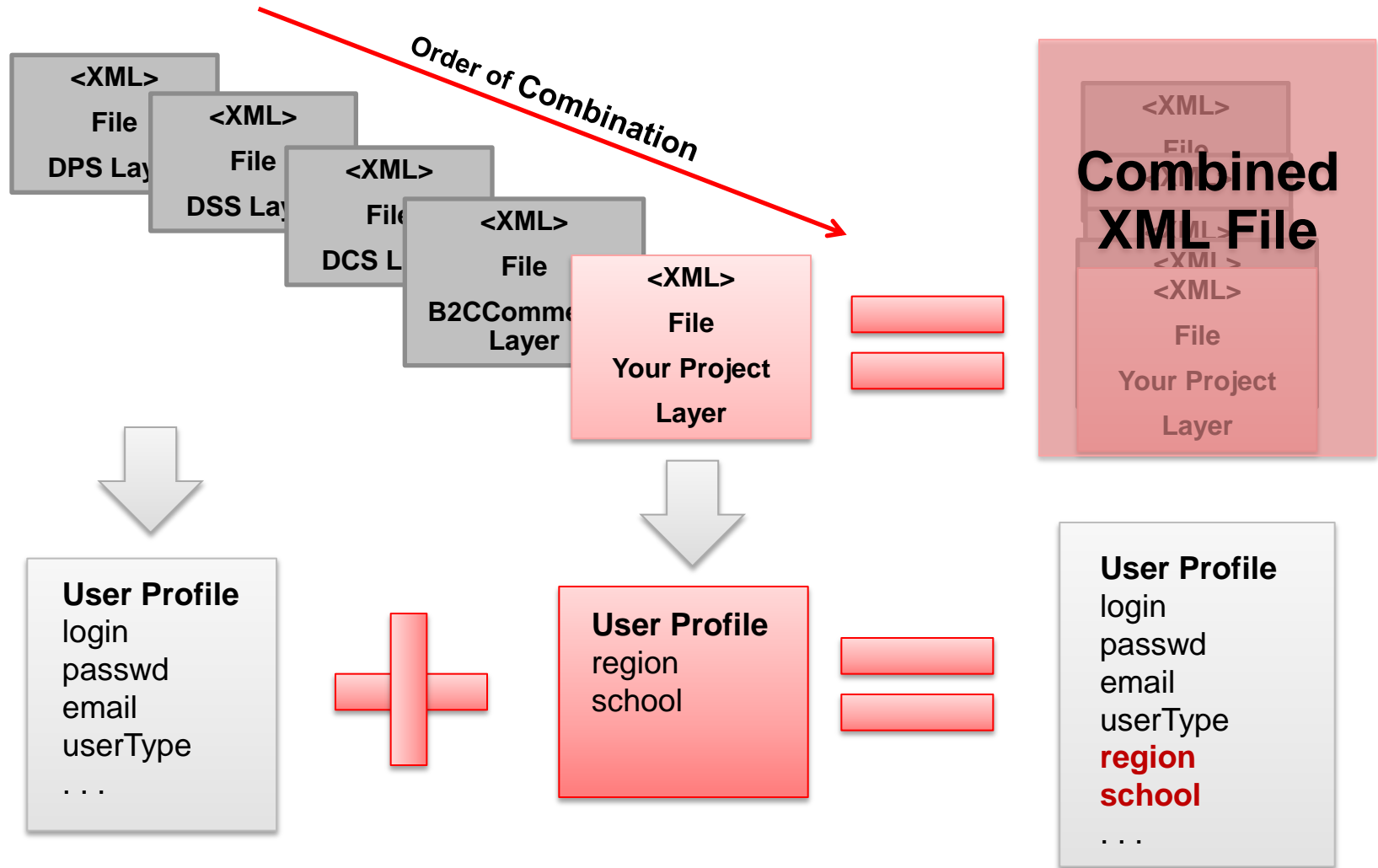
- Create a new table called MY_USER. It should have the following columns:
 - id VARCHAR2(40)
 - region NUMBER
 - school VARCHAR2(255)
- The SQL Statement should be:

```
CREATE TABLE MY_USER (  
    id      VARCHAR2(40) NOT NULL,  
    region  NUMBER,  
    school  VARCHAR2(255)  
);
```

XML File Combination

- Assuming your application uses the ATG Platform suite and B2CCommerce module, the userProfile.xml is a combination of:
 - <ATG10dir>/DPS/config/profile.jar
 - <ATG10dir>/DSS/config/config.jar
 - <ATG10dir>/DCS/config/config.jar
 - <ATG10dir>/B2CCommerce/config/config.jar
- To this you can add your own userProfile.xml such as:
 - <YOUR PROJECT>/config/atg/userprofiling/userProfile.xml
- The system uses XML file combination to combine these files into a single definition that is used.

XML File Combination



Step 2: Creating the userProfile.xml

- Create the XML file with either a text editor or an XML editor.
- The userProfile.xml should have a gsa-template element as the main element.
- You can optionally have a header element with name and author.
- It is like any other repository definition file.
- It should be placed in:
config/atg/userProfiling/userProfile.xml .

The UserProfile.xml File

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
<gsa-template>
  <header>
    <name>My Customized User Profile</name>
    <author>Joe Bruin</author>
  </header>

  <item-descriptor name="user" default="true"
    display-name-resource="itemDescriptorUser">

    <table name="MY_USER" type="auxiliary" id-column-name="id">

      <property name="region" data-type="enumerated"
        column-name="region" default="West">
        <attribute name="useCodeForValue" value="false" />
        <option resource="NorthEast" code="1" />
        <option resource="MidWest" code="2" />
        <option resource="South" code="3" />
        <option resource="West" code="4" />
      </property>

      <property name="school" data-type="string"
        column-name="school" />

    </table>
  </item-descriptor>
</gsa-template>
```

Viewing Combined Layers

- Using multiple repository definitions can be difficult for debugging.
- You can view the combined file in the Dynamo Server Admin interface as follows:

- Launch the dynamo admin interface from:

```
http://<YOUR_SERVER>:<PORT>/dyn/admin
```

- Browse to the nucleus component
/atg/userprofiling/ProfileAdapterRepository .
- The definitionFiles property of this repository component displays the combined XML definition file as well as the DTDs.
- The locations of all the source files are displayed as well.

Viewing Combined XML File in Dyn Admin

```
CONFIGPATH
filename      /atg/userprofiling/userProfile.xml

Source files  • /home/atg/ATG/ATG10.0.1/DPS/config/profile.jar/atg/userprofiling/userProfile.xml
              • /home/atg/ATG/ATG10.0.1/DSS/config/config.jar/atg/userprofiling/userProfile.xml
              • /home/atg/ATG/ATG10.0.1/DCS/config/config.jar/atg/userprofiling/userProfile.xml
              • /home/atg/ATG/ATG10.0.1/DCS/CustomCatalogs/config/config.jar/atg/userprofiling/userProfile.xml
              • /home/atg/ATG/ATG10.0.1/DCS/AbandonedOrderServices/config/config.jar/atg/userprofiling/userProfile.xml
              • /home/atg/ATG/ATG10.0.1/B2CCommerce/config/config.jar/atg/userprofiling/userProfile.xml
              • /home/atg/ATG/ATG10.0.1/CTR-UI/Store/config/config.jar/atg/userprofiling/userProfile.xml

System Id
(DTD name)    http://www.atg.com/dtds/gsa/gsa_1.0.dtd

XML value     <?xml version="1.0" encoding="UTF-8"?>

              <!DOCTYPE gsa-template SYSTEM "dynamosystemresource:/atg/dtds/gsa/gsa_1.0.dtd">

              <gsa-template>

                <header>
                  <name>Commerce Related Profile Changes</name>
                  <author>DCS Team</author>
                  <version>$Id: userProfile.xml,v 1.1 2001/04/26 </version>
```


Section 1



Check Your Understanding

What is the scope of the ProfileAdapterRepository?

Answer: The ProfileAdapterRepository is session scoped.

Section 1



Check Your Understanding

Where is the repository definition file for profile repository located?

**Answer: The repository definition file can be found at:
<CONFIGPATH>/atg/userprofiling/userProfile.xml .**

Section 1



Check Your Understanding

What are the steps for extending user profiles?

Answer:

Step 1: Create database table.

Step 2: Layer in using XML combinations the userProfile.xml file.

Section 1



Check Your Understanding

Where can you view the combined user profile repository definition file?

Answer: You can view the combined file in the Dynamo Server Admin interface

Section 1



Check Your Understanding

How can you create the XML profile repository definition file?

Answer: Create the XML file with either a text editor or an XML editor.

Summary

- ProfileAdapterRepository is the default SQL profile repository of ATG.
- The repository definition file for the repository is called userProfile.xml .
- By using standard repository definition file layering using xml file combination, you can override and/or extend the profile definition to suit your needs.
- You can create custom profile attributes by creating the database tables and defining the userProfile.xml file.
- You can view the combined XML file for the profile in the Dynamo Administration UI.



Section 2:

Dynamo User Directory



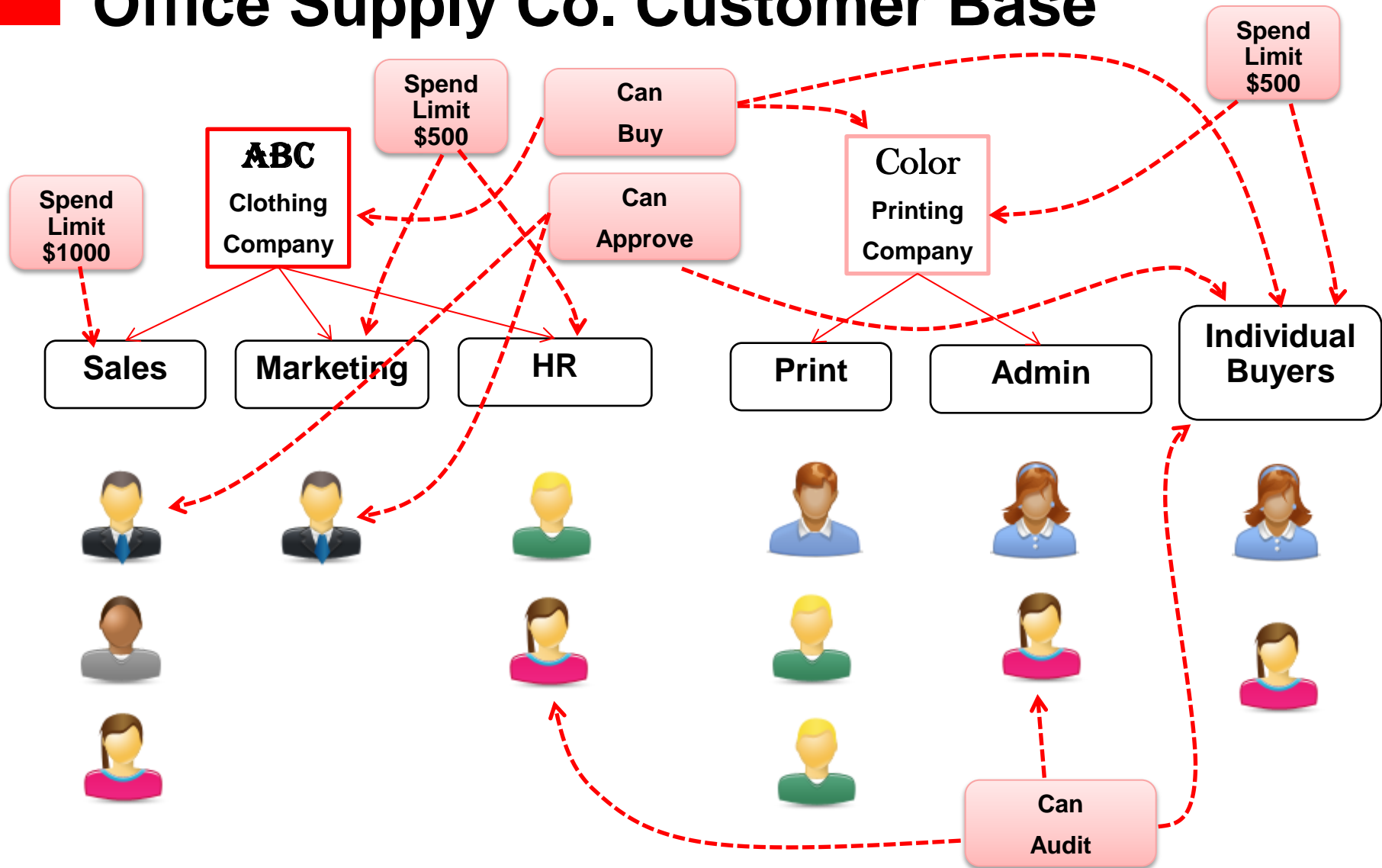
Dynamo User Directory

- The Dynamo user directory is a way of organizing the user information by representing the users in a graph or tree.
- It allows you to manage user profiles by capturing relationships between users and organizations to which they belong.
- Roles could then be assigned to user organizations and users.
- Organizations and roles can be used in combination with user profiles to configure access to different parts of the site or an application.
- User directories provide a uniform way for ATG security models to look at a user and to understand the user from a security point of view.

Example of Usage

- User directories are useful for a web site that serves a variety of users with widely different functions.
- Example: A B2B commerce site that sells office supplies.
 - Some users are simple buyers. They should be able to buy from the site.
 - They have supervisors with supervisor role for approving purchasing decisions.
 - There are auditors who can't buy, but can get a list of orders that were placed.
 - These users may belong to departments in their company (organization).
 - There may be several organizations using your site.

Office Supply Co. Customer Base



Implementation: Administrators and Merchandiser Functions

- To implement the requirements, the merchandisers and administrators would use the ACC and BCC.
- Users, organizations, and roles can be created in the ACC or BCC.
- Users can then be assigned to organizations.
- Roles can be assigned to organizations and to users as well.
- Users inherit the roles that are assigned to organizations or an organization's parent organization.

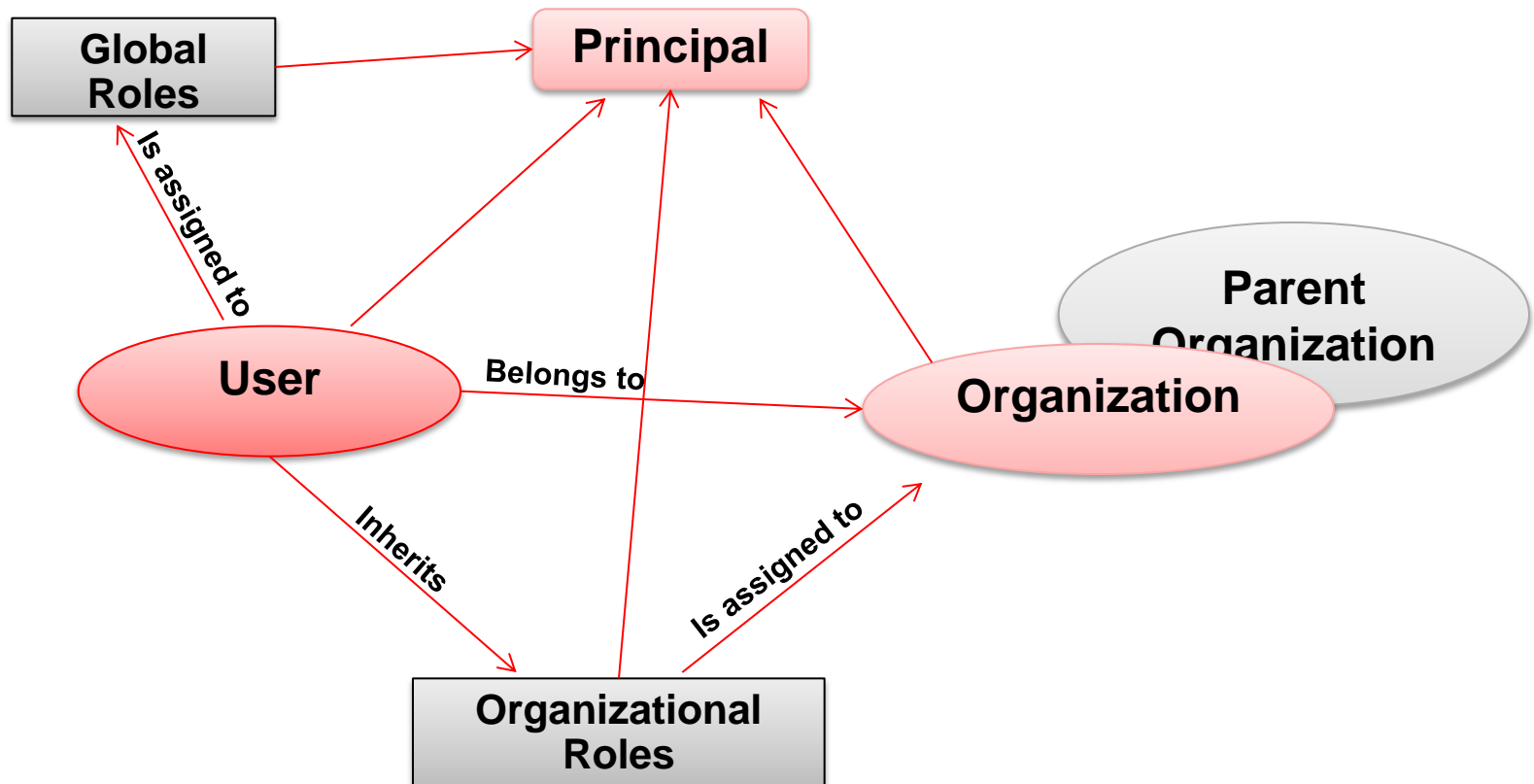
Implementation: Developer Function

- Developers could restrict access to full pages or to part of a page based on the user, organization, or role.
 - The approval page would be restricted by role 'Approver.'
 - The buy button would be restricted by role 'Buyer.'
- Use the `AccessRightsAccessController` and `AccessControlServlet` to restrict access to a page using global roles.
- Use the `HasFunction` droplet to check if the current user has or has inherited a role that has the function you are checking for.
- The droplet should wrap the buy button and render it in the true oparam of the droplet.

User Directory Architecture

- Users represent individuals.
- Users may belong to an organization and become **members** of that organization.
- Organizations may belong to parent organizations.
- Users do not need to belong to any organization.
- **Principals** are logical identities that may be granted or denied access rights in various ATG security domains.
- Users, organizations, and roles are all considered examples of principals.
- Roles are used to define some specific functions that users and organizations can have.

Relationship Within the User Directory



User Principal

- Users represent individual site users with profiles.
- Users can be assigned to an organization.
- Users who are assigned to an organization are called members of that organization.
- Users do not have to belong to an organization.
- Users can have at most **one** parent organization.
- One or more roles can be assigned to a user.
- Users will inherit roles that are assigned to the organization.

Organization Principal - Overview

- Organizations are hierarchical groupings of individuals in user directory.
- They correspond to the different ways you can group users in a company.
- You could set up a company as an organization and different business units as child organizations.
- A child organization automatically inherits the access rights of the parent organization.

Organization Principal - Properties

- The out-of-the-box organization item-descriptor has the following properties:
 - name,
 - description,
 - parentOrganization,
 - childOrganizations,
 - ancestorOrganizations,
 - roles (global),
 - relativeRoles,
 - members.

Role Principal - Overview

- Roles correspond to specific functions that a user can perform within an organization.
- Roles define actions that users can take or positions that they hold:
 - For example, you can assign someone the role of "buyer" within a specific organization.
 - Buyers may have access to certain repository items, and you can easily group together all users who have the role "buyer."
- Organizational roles are derived by all members of that organization.
- Roles are typically used in a security context to restrict information to certain users.

Role Principal — Properties

- The out-of-the-box role item-descriptor has the following properties:
 - type (role/relativeRole),
 - name,
 - description,
 - version.
- The relativeRole is a subtype of role, and adds the following properties:
 - function,
 - relativeTo: tells which organization the relative role belongs to.

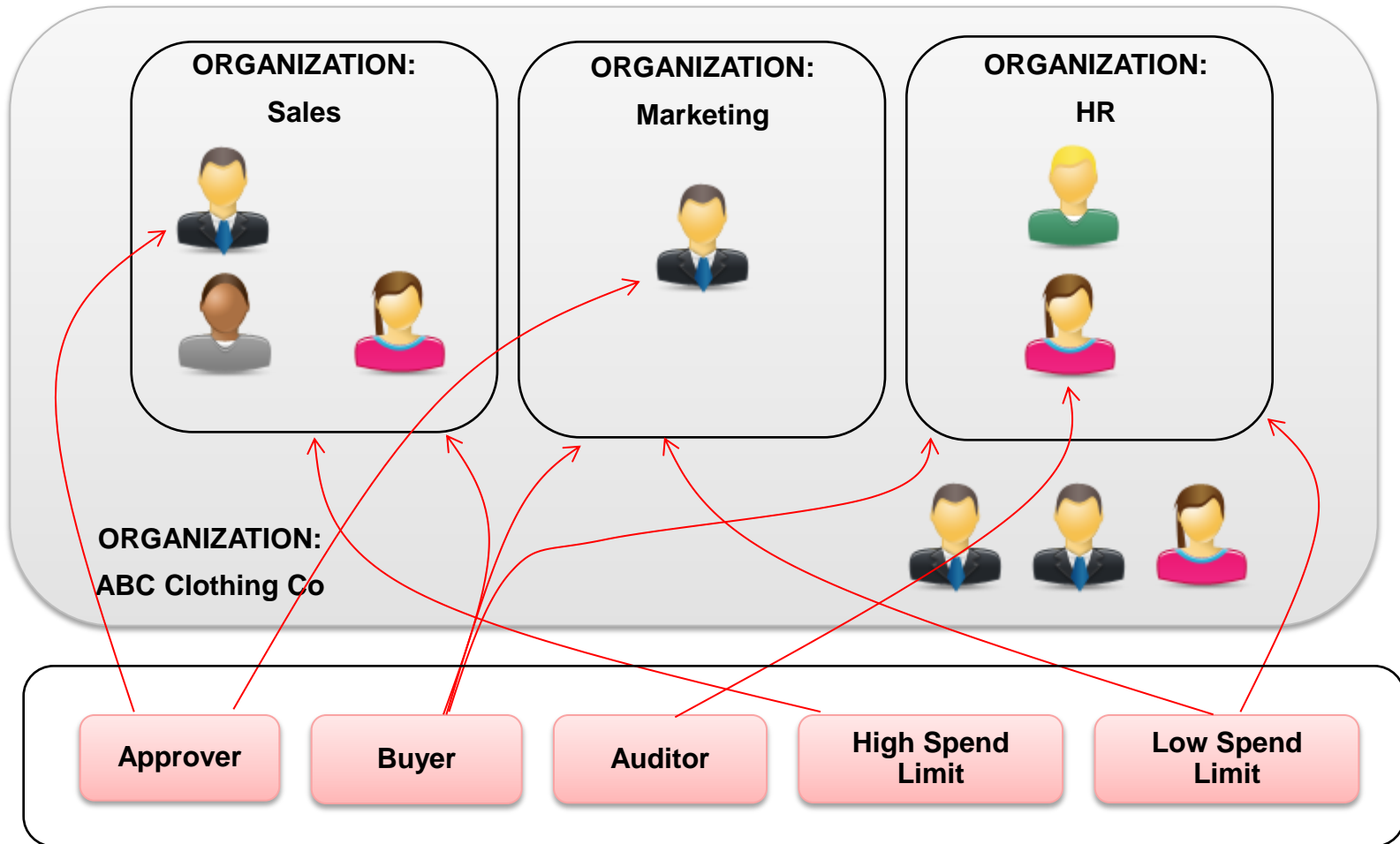
Role Principal — Types of Roles

- Global roles can be assigned to any user or organization.
 - If you assign a global role to an organization, all users who belong to that organization and any child organizations inherit that role.
 - Global roles are the only kind of roles that you can organize in role folders.
- Organizational roles are roles that a user plays in the context of a specific organization.
 - Organizational roles are also called relative roles.
 - Organizational roles have the ***function*** property that allows you to establish a connection among similar organizational roles.

Function

- An organizational role has a property called function.
- Function allows you to establish a connection among similar organizational roles across the same or multiple organizations.
- For example, you may have organization roles such as Marketing Director, Human Resource Director, and Customer Service Director.
 - All of the above have one basic function, “director.”
- By specifying a common function property value for the roles, you can implement behavior that is driven by it.
- The droplet HasFunction could be used to render a JSP fragment if the user has a role that has a function.

Example of User, Organizations, and Roles



User Directory Security

- The Dynamo User Directory functions both as an organizational tool and as a security tool.
- As an administrator, you can allow or deny access to specific repository items and to specific properties of those repository items.
- You can use ACL based access rights to internal and external items to achieve this repository security.
- You can also use ACL based access rights assigned to global roles to secure access to various parts of your Web Application.

Access Right Repository Item

- AccessRights repository item has the following properties:
 - name,
 - description,
 - scope (enumerated: global, organization),
 - type (enumerated: generic – for extension).
- AccessRights can be added to a role.
- AccessRights you assign to a role that is assigned to a parent organization will be automatically inherited by the child organizations.

Example: Controlling Access to Edit Profiles Page

- You have a page that is available to internal staff of your site to edit customer profiles.
- You would like to control access to it to specified users.
- In the internal user profile repository, you create an accessRight repository item called `edit_customer_profiles` .
- Configure an `AccessRightAccessController` component.
- Configure an `AccessControlServlet` component.
- In the ATG ACC or BCC, assign the access right to a global role and assign the global role to the specified users.

EditCustomerProfilesAccessRightController Component

- The class is AccessRightAccessController.
- It is a global scoped component.
- It identifies the accessRight we will create in the ACC.
- deniedAccessURL is where the users are redirected.
- EditCustomerProfileAccessRightController.properties is:

```
$class=atg.userprofiling.AccessRightAccessController  
$scope=global
```

```
accessRightsPropertyName=accessRights  
accessRightNamePropertyName=name  
allowedAccessRightNames=edit_customer_profiles  
deniedAccessURL=/MyWebApp/accessDenied.jsp
```

AccessControlServlet Component

- The class is AccessControlServlet.
- It identifies a map with jsp pages as key and the previously created component as value.
- EditCustomerProfileAccessRightController.properties is:

```
$class=atg.userprofiling.AccessControlServlet
profilePath^=ProfileRequestServlet.profilePath
enabled=true

accessControllers+=\
  /MyWebApp/edit_address.jsp=
    /atg/mymodule/EditCustomerProfileAccessRightController, \
  /MyWebApp/edit_username.jsp=
    /atg/mymodule/EditCustomerProfileAccessRightController

#default
deniedAccessURL=/MyWebApp/accessDenied.jsp
```

Configuring the accessRight in the ATG or BCC

- In the ATG ACC or BCC, navigate to user and roles.
- Create an accessRight repository item called edit_customer_profiles .
- Create a global role called ProfileEditor .
- Assign the accessRight to the global role.
- Assign the global role ProfileEditor to the users or to the organization.
- Test by logging in as the user with access and navigating to the page.
- Test by logging in as a user with no access and navigate to the page. Verify that you get access denied page.

Using Servlets to Secure Part of a Page

- **HasEffectivePrincipal:**
 - HasEffectivePrincipal checks whether a user has a specified identity and renders content based on the result of its query.
- **HasFunction:**
 - Tests whether a given user has the role with the specified function.
- **TargetPrincipalsDroplet:**
 - Locates all organizations where a user has the specified role.
- **ViewPrincipalsDroplet:**
 - Lets you locate a user's roles or organizations.

Section 2

Check Your Understanding

What can developers use to configure access to different parts of a site?

Answer: Organizations and roles can be used in combination with user profiles to configure access to different parts of the site or an application.

Section 2

Check Your Understanding

What is the behavior of the users when roles are assigned to organizations?

Answer: Users inherit the roles that are assigned to organizations or organization's parent organization.

Section 2

Check Your Understanding

What controller and servlet can be used to restrict access to a page?

**Answer: Use the
AccessRightsAccessController and
AccessControlServlet to restrict access to
a page using global roles.**

Section 2

Check Your Understanding

What are examples of principals?

Answer: Users, Organizations, and Roles.

Section 2

Check Your Understanding

What is a function in the context of a role?

Answer: Function allows you to establish a connection among similar organizational roles across the same or multiple organizations.

Section 2

Check Your Understanding

Name a few droplets that help in securing a page.

**Answer: HasEffectivePrinciple,
HasFunction, etc.**

Summary

- The Dynamo User Directory is a way of organizing the user information by representing the users in a graph or tree.
- User directories provide a uniform way for ATG security models to look at a user and to understand the user from a security point of view.
- Developers can assign security restrictions for either a whole page or to part of a page.
- User, Organization, and Role are called principal elements.
- Repositories can be secured using Access Control List type security settings.





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