



White Paper:

Alternative Hierarchies

Identity Management and XML Directory Services Solution

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Credentials

ViewDS Identity Solutions owns and develops ViewDS, the Directory Server that is deployed in Government, Defence, and private sector companies throughout the world. This technology has some unique features that deliver superior performance and capabilities for various applications; the following is one such case.

Introduction

This whitepaper describes the process used for ViewDS to support a functionality that once given minimal data can derive hierarchical views that are different from the stored hierarchy.

What is Alternative Hierarchies?

Alternate Hierarchies are a concept more than a technology in their own right. By leveraging data that exists in most organizations, ViewDS can derive other ways of looking at the same personnel. Most directory systems will come across the same problem during their design phase.

What should the directory hierarchy represent? Some examples are:

- A flat structure – Easy to manage but not very useful when viewed by users.
- A hierarchy based on physical location.
- A hierarchy based on which department people belong.
- A combination of the previous two: Physical structure for the first level then organizational structure at each physical location. The main idea behind Alternate Hierarchies is to offer a number of different structures from a single set of data.

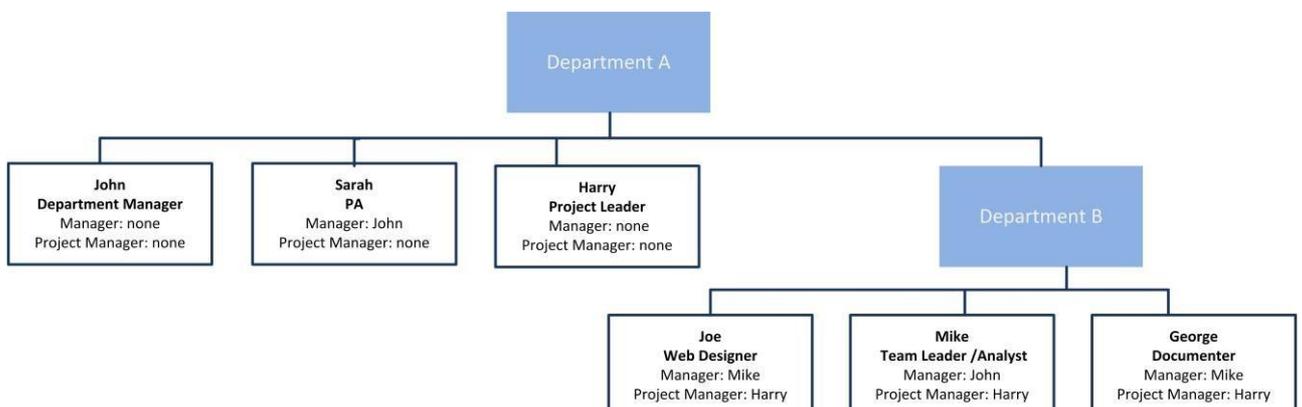
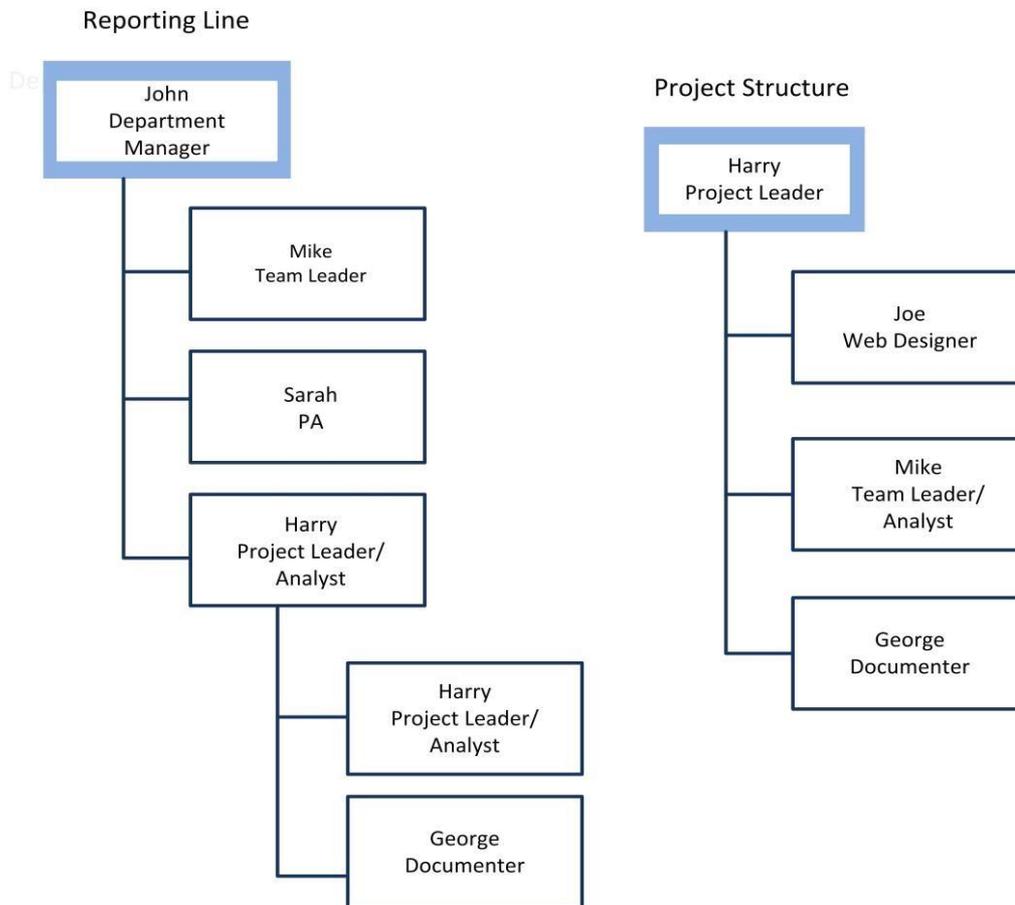


Figure 2 – Alternative Hierarchies



System Requirements

The requirements are quite simple in technical terms but can be a little complex to manage. For each structure that you wish to represent, there needs to be an attribute in each entry that stores a reference to the entries superior. It must store only the direct superior as that entry will also store its superior and so forth.

While this is easy to store, the management of this data grows exponentially with the number of structures to track. This load is easier to manage with automated tools (external sources of data) or by allowing users to manage their own details.

Once the data is stored in the directory, it can be displayed using a customized entry details template.

How does the process work?

In its normal form, the structures are viewed as three levels: The Superior, Focus, and Children entries. The Focus entry is in the middle of the chart, and the levels above and below are displayed in relation to it. The superior entry is the one that is stored in the specified attribute of the focus entry. For example, Harry the project leader has John the Department Manager as his superior. The children entries are any entry that has the focus reference in their attribute, and from our example we can see that Joe, Sally and George all reference Harry as their superior reference.

How this is displayed is up to the customer and can be represented either in customized pages graphically (as displayed above) or even as a subsection of an existing detail page.

1. The server will return the entry's distinguished name if the search matched only a single entry. If it matched either more than one or no entries then the anonymous user entry is returned.
2. Access Presence will now communicate with the directory to carry out the requested tasks (as defined in the web page request) with the authentication credentials as returned by the previous step.
3. The resulting web page is returned to the web server.
4. The web server passes the page to the web browser.
5. The web browser renders the web page on the screen for the user.

The Benefits of Using Alternative Hierarchies

There are a number of benefits from using the alternate hierarchy displays in the Directory. Some of these benefits include:

- Greater visibility for how the organization works.
- Reduced stress on the existing structure to meet every requirement in its
- representation of the organization.

- A non-tangible benefit to the personnel in having better clarity of their place in the organization.
- A simple structure, data that may not be easy to comprehend in its raw form.

Conclusion

This is a technology that is easy to implement and can demonstrate a very visible enhancement to the directory environment. When combined with other technologies such as self-service, it becomes simpler to manage, while offering the personnel greater ownership of their data.