

Directory Services Diagnostic Scenario

1. *Header information.* Directory Services provide authentication and authorization services and act as a data store for attributes needed to support these functions. Often directory services are used for white pages functionality and to provide group management.

The end user of a directory service is anyone who relies upon directory-enabled services for authentication, authorization, or attribute retrieval. This will include the local community, and may also include anyone who wishes to contact people within the local community.

The economic buyer of directory services is the CIO or IT department. The technical buyer is often a Middleware director, Infrastructure services director, or Security director.

2. *A Day in the Life (Before)*

The idea here is to describe a situation in which the user is stuck, with significant consequences for the economic buyer. The elements you need to capture are six:

- *Scene or situation:* Campus directory is receiving normal mid-semester mid-week usage, providing authentication and authorization for directory-enabled applications including Procurement, Learning Management, the Campus Portal, the ERP, self-service preferences, email routing, campus white pages lookup, and email lookup.
- *Moment of Frustration:* At 3:30 pm the helpdesk begins receiving notifications that users are unable to authenticate in various applications. The errors returned to the applications indicate that either the user id or password credential is invalid. Also calls are received that email lookups are exceedingly slow. The operations center receives an alert from the SNMP system that one of the directory servers is responding slowly and pages the directory system administrator.
- *Desired outcome:* The helpdesk needs to be able to determine the scope of the problem as quickly as possible so that appropriate notifications can be set up to prevent the helpdesk from being swamped with complaints. The directory administrator needs to be able to determine quickly whether the directory server is under strain and the root cause. If the root cause is the directory service then the directory administrator would resolve it, otherwise the appropriate additional resources would need to be contacted.
- *Attempted approach:* One helpdesk operator has a caller attempt to log in multiple times, thinking that perhaps the person is entering an invalid password and the problem scope is user specific. Another helpdesk operator contacts application support believing the problem scope is application specific. Soon the helpdesk is swamped under calls. The directory administrator is able to determine by examining the logs that the

directory service is under strain due to a high volume of email lookups sent from the email service. The directory administrator contacts the email service administrator. The email administrator examines the logs and determines that an internal application is sending thousands of emails and therefore generating thousands of lookup requests per second to the directory service. The email administrator contacts the application administrator who kills the runaway process, and the systems return to normal levels. Slowly the helpdesk call volume is reduced.

- *Interfering factors:* The helpdesk is unable to ascertain the scope of the problem properly and therefore is unable to create an automated response or notification resulting in their being swamped with calls. The directory administrator is able to view the directory logs, but requires the aid of the email administrator to determine which application is at fault.
- *Economic consequences:* The helpdesk is unable to handle calls for other incidents. All directory-dependent functions were slowed to the point of timing out, preventing access to a wide variety of applications and services.

3. *A Day in the Life (After)*

New approach:

Upon receiving the initial calls the helpdesk checks the performance monitoring systems and immediately sees that the directory service started dramatically trending upward in usage at 3:10 and is now at 100% capacity. The helpdesk posts a notification to their website and automated response system and contacts the directory administrator. The directory administrator accesses the central logging system and determines that the email service is sending thousands of requests from an internal application to the directory service. The directory administrator contacts the application administrator who kills the runaway process.

Enabling factors:

Centralized performance monitoring accessible to helpdesk personnel and centralized logging accessible to service administrators allows the problem to be identified quickly and the appropriate administrators contacted.

Economic rewards:

Minimized impacts to the helpdesk and directory-enabled application users.