

Drupal as a CMDB

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About Nomura

■ Nomura is:

- Japan's largest Investment Bank
- Employer of 2,200 staff in London
- Manager of assets worth US\$256 billion

■ Nomura's IT infrastructure:

- Dozens of FSA-regulated "key-risk" applications
- Thousands of servers
- Hundreds of terabytes to backup
- Robust systems exist for:
 - n Asset management
 - n Change management

■ Requirement:

- ***"To regularly prove that we have complete and consistent backups of each of our key-risk applications."***

■ The challenges:

- No existing link between applications and their components
- Applications can be made up of dozens of servers
- Multiple environments (Production, DR, UAT, Development)
- Backup software can only report on filesystems we've manually configured

Drupal as a CMDB

A configuration management database (CMDB) is a repository of information related to all the components of an information system. (wikipedia)

■ Our needs

- Data collection
- Relationship management
- Reconciliation
- Reporting

■ Why Drupal?

- Nodes
- What you get out of the box
- The APIs
- Open Source

Data collection

Configuration Management

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- Reports
- Create item
- Administer
- Content management
- Site building
- Site configuration
- Data collection
 - Filesystem import
 - Host import
 - NetBackup import
 - Reports
- User management
- Reports
 - Help
 - Log out

Data collection

Collector actions

<input type="checkbox"/>	Name	Command	Last run	Elapsed	Last result	Operations
<input type="checkbox"/>	Import unix filesystems	filesystem_import_unix_action	Mon, 08/11/2008 - 13:09	14 min 16 sec	Running	Schedule
<input type="checkbox"/>	Import windows filesystems	filesystem_import_windows_action	Mon, 08/11/2008 - 00:40	20 min 52 sec	Hung	Schedule
<input type="checkbox"/>	Datacentre host import	host_import_datacentre_action	Sun, 08/10/2008 - 19:22	11 min 3 sec	OK	Schedule
<input type="checkbox"/>	LDAP host alias import	host_import_alias_action	Sun, 08/10/2008 - 17:41	8 min 53 sec	Unknown	Schedule
<input type="checkbox"/>	Unpublish decommissioned hosts	host_unpublish_decom_action	Mon, 08/11/2008 - 13:06	1 min 46 sec	OK	Schedule
<input type="checkbox"/>	NetBackup policy import	netbackup_import_policy_action	Sun, 08/10/2008 - 20:40	3 min 14 sec	OK	Schedule
<input type="checkbox"/>	NetBackup job status import	netbackup_import_job_action	Sun, 08/10/2008 - 20:43	0 sec	OK	Schedule
<input type="checkbox"/>	NetBackup audit report refresh	netbackup_update_audit_action	Mon, 08/11/2008 - 00:00	0 sec	Error	Schedule



Data collection schema

- Maps input to Drupal data structures
- Similar to Drupal's Schema API
- Supports CCK data types
- Creates relationships based on lookup values

```
/**
 * Implementation of hook_datamap().
 */
function filesystem_datamap() {
  $datamap['unix_filesystem'] = array(
    'fields' => array(
      'reference' => array(
        '#type' => 'text',
        '#field' => 'title',
        '#key' => 'true',
      ),
      'mountpoint' => array(
        '#type' => 'text',
        '#cck' => 'true',
        '#field' => 'field_mountpoint',
      ),
      'device' => array(
        '#type' => 'text',
        '#cck' => 'true',
        '#field' => 'field_device',
      ),
      'hostname' => array(
        '#type' => 'text',
        '#field' => 'hostname',
        '#relationship_type' => 'resource',
        '#relationship_parent_type' => 'host',
        '#relation_lookup_table' => 'node',
        '#relation_lookup_field' => 'title',
      ),
    ),
  );
};
```

Relationships

- > Reports
- > Create item
- > Administer
- Log out



View
Edit
Relationships

Update options

<input type="checkbox"/>	Source	Relationship	Target	Type	Owner	Status	Operations
<input type="checkbox"/>	rsync01	mounts	/usr/bin/	Resource dependency	admin	active	delete
<input type="checkbox"/>	rsync02	mounts	/usr/bin/usr	Resource dependency	admin	active	delete
<input type="checkbox"/>	rsync03	mounts	/usr/bin/var	Resource dependency	admin	active	delete
<input type="checkbox"/>	rsync04	mounts	/usr/bin/cache	Resource dependency	admin	active	delete
<input type="checkbox"/>	rsync05	mounts	/usr/bin/export/ro/u1	Resource dependency	admin	active	delete
<input type="checkbox"/>	rsync06	mounts	/usr/bin/export/rw/u2	Resource dependency	admin	active	delete
<input type="checkbox"/>	rsync07	mounts	/usr/bin/export/dumps/infprd_dumps	Resource dependency	admin	active	delete
<input type="checkbox"/>	rsync08	is backed up by	smoprdr_phase2	Process dependency	admin	active	delete
<input type="checkbox"/>	rsync09	software runs on	infprdr	Software dependency	admin	active	delete
<input type="checkbox"/>	rsync10	is backed up by	infprdr_os5	Process dependency	admin	active	delete
<input type="checkbox"/>	rsync11	is backed up by	infprdr_sybase_system	Process dependency	admin	active	delete
<input type="checkbox"/>	rsync12	is backed up by	<input type="text"/>	<input type="button" value="Add relation"/>			

How it all fits together

Core and contributed:

■ Data collection & reconciliation:

- Batch API
- Actions
- Trigger

■ Reporting

- Views

■ General

- Content Construction Kit (CCK)
- Revision Moderation
- Search
- Web Services
- LDAP

Developed in-house:

■ Data collection & reconciliation:

- Collection API & custom collectors
- Actions scheduler

■ Reporting

- Computed status (CCK field)
- Relation (CCK field)

■ Relationship management:

- Relationship API

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