

User Inventory Database

After the initial ShakeCast™ installation, creation and maintenance of the user database is the most important aspect of the ShakeCast system administration. Dynamic contents of a ShakeCast system include the earthquake products (both automatically-generated locally and received from the USGS ShakeMap server) and the user-defined inventory database data types: facility, facility fragility, and user notification information.

[Routine Maintenance](#) provides advisory on the best practice to optimize performance of the user's ShakeCast system. It is recommended that the user formulates a procedure for the creation and update of the user's inventory depending on the inventory size and the update interval. The [ShakeCast Manual](#) contains detailed instructions for managing user utilities. It is often the most effective for users with large or frequently updated inventory to work and save the inventory data in CSV format files before using the ShakeCast import tools to populate the ShakeCast database.

				FACILITY_TYPE_FRAGILITY_ID	FACILITY_TYPE	DAMAGE_LEVEL	LOW_LIMIT	HIGH_LIMIT	UPDATE_USERNAME	UPDATE_TIMESTAMP	METRIC
<input type="checkbox"/>	<input type="checkbox"/>			558	RM2MP	YELLOW	16	30	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			559	RM2MP	ORANGE	30	54	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			560	RM2MP	RED	54	99999	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			561	RM2HP	GREEN	0	15	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			562	RM2HP	YELLOW	15	31	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			563	RM2HP	ORANGE	31	57	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			564	RM2HP	RED	57	99999	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			565	URMLP	GREEN	0	20	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			566	URMLP	YELLOW	20	30	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			567	URMLP	ORANGE	30	43	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			568	URMLP	RED	43	99999	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			569	URMMP	GREEN	0	15	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			570	URMMP	YELLOW	15	24	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			571	URMMP	ORANGE	24	44	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			572	URMMP	RED	44	99999	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			573	MHP	GREEN	0	13	kwl	2007-09-25 13:48:36	PGA
<input type="checkbox"/>	<input type="checkbox"/>			574	MHP	YELLOW	13	21	kwl	2007-09-25 13:48:36	PGA

Facility and fragility table screenshot

Facility

A facility record requires at least four data fields: facility_type, external_facility_id, lon, and lat. Among these required fields, the combination of facility_type and external_facility_id needs to be unique. The user should not manipulate the unique facility identifier facility_id automatically assigned by the ShakeCast system.

The manage_facility.pl utility is used to insert, update, or delete facility data in the ShakeCast database. It reads data from one or more CSV format files. Below is an example of CSV input file including the header line,

```
FACILITY_TYPE , EXTERNAL_FACILITY_ID , FACILITY_NAME , LAT ,  
LON  
CITY , Rancho Cucamonga , Rancho Cucamonga , 34.1233 ,  
-117.5794  
CITY , Pasadena , Pasadena , 34.1561 , -118.1318
```

The manage_facility utility is the primary tool for managing facility inventory. The ShakeCast administrative interface for facility management is the front-end CGI to this tool except for editing individual facility data. Ideally the ShakeCast administrator should become familiar working with this tool and the associated facility CSV file.

Additionally, a facility can be defined as a rectangular area object by substituting the lat/lon point information with lat_min/lat_max/lon_min/lon_max. The other predefined data fields for a facility include: facility_name, short_name, description, update_username, and update_timestamp.

It is possible to define facility type-specific information in the format of facility attributes. We are currently reviewing the implementation of this table and will discourage extensive use of the function.

Fragility

In ShakeCast Version 2, facility fragility is implemented as a set of lookup tables by combining selected ShakeMap metrics (MMI, PGA, PGV, PSA03, PSA10, and PSA30) with associated shaking values. Each user-defined damage state for a facility (or facility type) requires a chosen metric and the range of shaking values.

ShakeCast comes with fragility settings for the HAZUS model building type. By selected the representative facility type the fragility information will be assigned to the facility. The fragility settings associated with a facility type, which is editable, will be used for damage assessment if no facility specific fragility settings are assigned.

The manage_facility.pl utility is also used for manipulating the facility fragility information. It is most convenient to include facility specific fragility into the facility CSV file as part of the facility inventory. Below is an example of CSV input file with fragility assignment,

```
FACILITY_TYPE,EXTERNAL_FACILITY_ID,FACILITY_NAME,LAT,
LON, METRIC:MMI:GREEN,METRIC:MMI:YELLOW,METRIC:MMI:RED
CITY,Rancho Cucamonga,Rancho Cucamonga,34.1233,
-117.5794,1,5,7
CITY,Pasadena,Pasadena,34.1561,-118.1318,1,5,7
```

User Information

A ShakeCast user record contains two aspects of information, access privileges and notification preference. It requires at least two data fields: username and user_type. The username field needs to be unique and should avoid using special characters.

The manage_user.pl utility is used to insert, update, or delete facility data in the ShakeCast database. It reads data from one or more CSV format files. Below is an example of CSV input file including the header line:

```
USER_TYPE,USERNAME,FULL_NAME,EMAIL_ADDRESS,PHONE_NUMBER,DELIVERY:PAGER,DELIVERY:EMAIL_HTML
ADMIN,johndoe,John Doe,johndoe@localhost,123-456-7890,testpager@localhost,test_html@localhost
```

User notification configuration is usually done in one of the two methods, profile template or replicate of an existing user. Profile template usually works well for multiple users who share the same notification preferences. User replication is applicable when a smaller number of users involved and is applicable when users may have different notification preferences. This operation is usually done via the ShakeCast web interface.