Chapter 6
Security Infrastructure

The Corporate Property Automated Information System (CPAIS) is required to pass security certification and accreditation before being placed into production. All components of CPAIS are to execute at or above the USDA C2 Level of Trust.

6.1 Purpose

The purpose of this chapter is twofold: to describe how features of Oracle 9i® will be used to implement the system security needs of CPAIS, as delineated in the CPAIS *Functional Requirements Analysis*; and to describe security features embedded in the CPAIS application.

6.2 ASSUMPTIONS

In order to implement CPAIS security requirements the following is assumed:

- Service access and delivery will be via web browser, e.g., Internet Explorer 5.2 over the USDA intranet (see CPAIS OMB Circular A-11 Exhibit 300).
- Oracle9iAS Single Sign-On is a service of the Oracle9i® Application Server, which will be used for access to CPAIS until Tivoli Access Manager can be procured and implemented.

6.3 REFERENCES

Listed here are references to be used in implementing the CPAIS Security Infrastructure:

- Corporate Property Automated Information System Security Features Users Guide, Version 0.1, August, 2003
- Corporate Property Automated Information System Security Plan, Version 0.1, May, 2003
- Corporate Property Automated Information System Privacy Impact Assessment, Version 1.0, May, 2003
- Oracle9*i* Database Concepts, Release 2 (9.2)
- Oracle Advanced Security Administrator's Guide, Release 2 (9.2)
- Oracle9*i* Application Developer's Guide - Fundamentals, Release 1 (9.0.1)

- Oracle9*i* Database New Features, Release 2 (9.2)
- Oracle9*i* Database Generic Documentation Addendum, Release 2 (9.2)
- Oracle9*i* Security Overview, Release 2 (9.2)
- Oracle9*i* Designer: Technical Overview – A White Paper, April, 2002
- Oracle9*i* Application Server Security Guide, Release 2 (9.0.2)
- Oracle 9iAS Security - FAQ Oracle9iAS Single Sign-On Oracle9iAS JAAS Provider Oracle9iAS Single Sign-On: http://otn.oracle.com/deploy/security/oracle9ias/pdf/9iAS_faq1.pdf

6.4 Summary

The following table lists the CPAIS security requirements and cites the section(s) of the CPAIS *Functional Requirements Analysis* from which each is derived:

SECURITY REQUIREMENT	**SECTION(S)**
1. CPAIS is required to follow the USDA policy that agencies implement the USDA C2 Level of Trust on all servers storing, processing or maintaining mission critical information.	3.4.1 and 3.5
2. The system requires an identification and authorization procedure for users, and will protect authentication data and identify each individual system user.	3.4.1 and 3.5.1
3. CPAIS must accommodate a minimum password length of 6-8 alphanumeric characters. To comply with C2, password for CPAIS shall be changed every 60 days for general users. Passwords issued to system administrators, system managers and software engineers shall be changed every 30-45 days. They must be encrypted and dictionary words shall not be used for passwords.	3.5.1
4. Need to encrypt Sensitive but Unclassified/ Sensitive Security Information (SBU/SSI) data.	3.2.2, 3.3.2 and 3.3.3
5. Discretionary Access Control (DAC) is necessary to maintain USDA C2 Level of Trust.	3.5.3
6. SBU/SSI data should be made available on a need-to-know basis. SBU/SSI information must be marked in a conspicuous manner with the following notice: "Sensitive But Unclassified/Sensitive Security Information – Disseminate on a Need-To-Know Basis Only."	3.2.2 and 3.5.2

SECURITY REQUIREMENT	SECTION(S)
7. The system will identify and maintain a log of all auditable actions taken by each individual user. CPAIS must have valid audit trail capabilities, including: ▪ Who completed the transaction ▪ What did the transaction accomplish or attempt ▪ Where did the transaction take place ▪ When did it occur ▪ For system users - time/date of logon or logoff, and the workstations/IP address used	3.4.1 3.5.5
8. The system will be able to create, maintain, and protect from modification or unauthorized access through an audit trail of accesses to the objects it protects.	3.4.1
9. CPAIS must follow the requirements regarding Object Reuse (storage object/device storing sensitive data has been cleared of the information before it is used for other purposes).	3.5.3

6.5 SYSTEM SECURITY Detail

These sections detail how to implement the security requirements listed above, utilizing the Oracle 9i® security capabilities. Among the features of Oracle9i to be used to secure CPAIS are:

- Single Sign-On
- Three-tier security
- Standards-based Public Key Infrastructure (PKI)
- Oracle Internet Directory

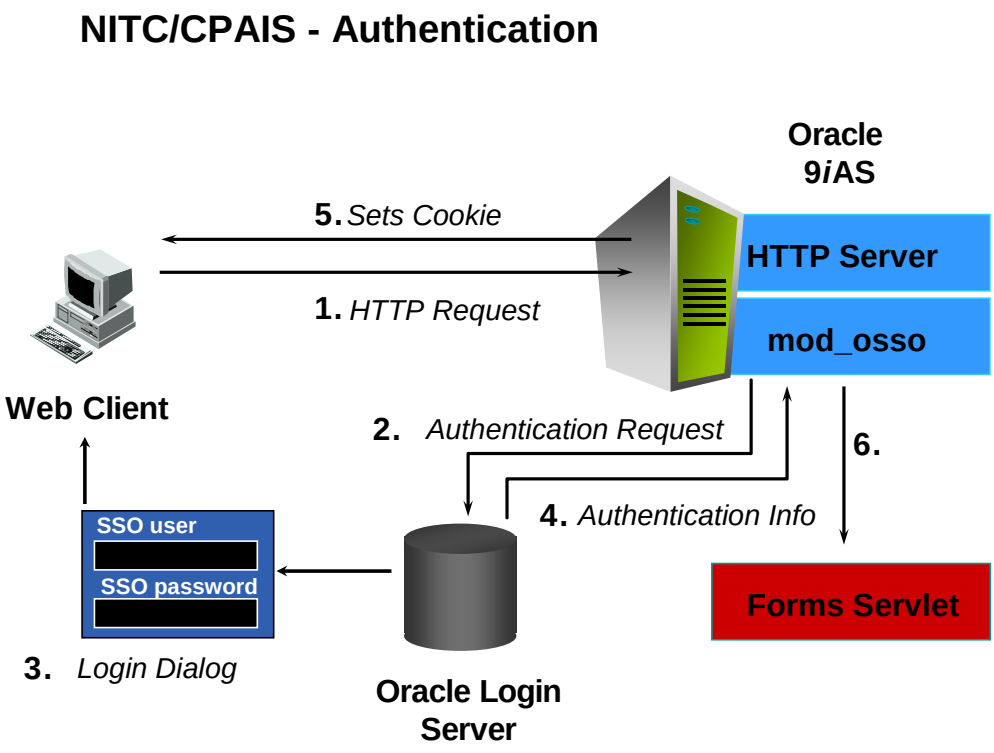
These are briefly defined below and the remaining sections describe how they are to be used.

6.5.1 Single Sign-On

Single Sign-On (SSO) fully integrates various components in the CPAIS application into one cohesive product. Such components include Java/UIX based main menu, web forms, web reports, Discoverer, and fine grain security. This feature provides one secure point of user authentication and validation for the various CPAIS application components. SSO also uses a standard based approach as it utilizes Internet standards like HTTP(S) protocols, cookies and SSL certificates issued by a trusted Certificate Authority (CA) such as Verisign. The single sign-on server stores and authenticates end users against the Oracle Internet Directory (OID), a Lightweight Directory Access Protocol (LDAP), version 3 compliant directory. The OID is described further in a following section.

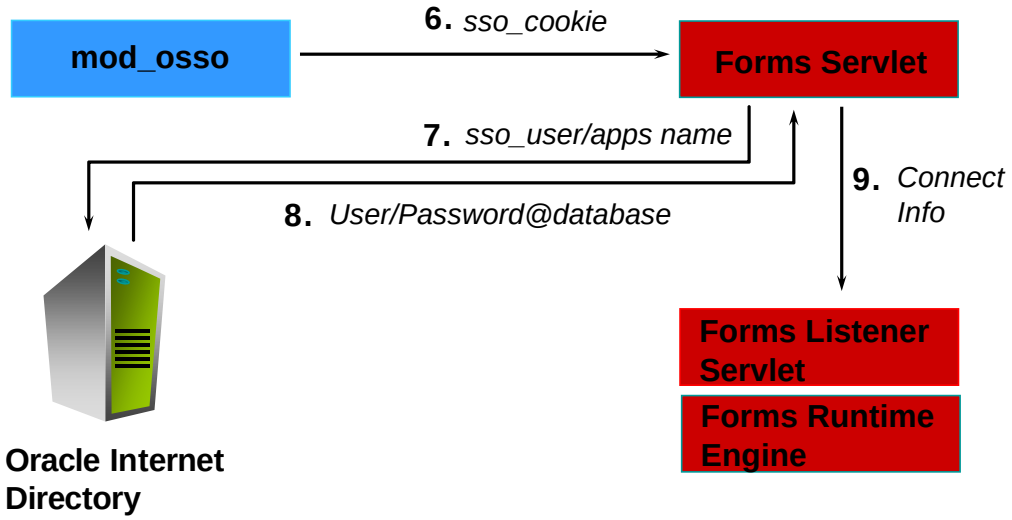
As SSO allows one time login for all the CPAIS components, it also provides for Single Sign-Off from all the components accessed by the user.

It is important to note that the database server-based single sign-on via Oracle Advanced Security (ASO) is not implemented since the CPAIS application already authenticates end users from the middle-tier SSO. ASO on the other hand, configures single sign-on on the database side. Database SSO (with Advanced Security – ASO) is for clients that login directly to the database, whereas 9iAS SSO is for web-based applications using 9iAS.[1]



[1] http://www.ocionet.usda.gov/ocio/cyber_sec/policy.html

NITC/CPAIS – Authentication cont'd



SSO Authentication process:

1. A user requests a URL through a web browser.
2. The web server looks for a mod_osso cookie for the user. If the cookie exists, the web server extracts the user's credentials and uses this information to log the user in the CPAIS application.
3. If the cookie is not found, the user is redirected to the SSO login page.
4. The information is sent to the login server.
5. If the authentication is a success, the SSO creates a cookie in the browser just to re-mind that the user is authenticated.
6. The web server creates its own cookie for the user in the browser and redirects the end user to the URL requested.
7. The second authentication to the mod_osso is approved.
8. The database access credentials are sent to the forms servlets to establish connection.

6.5.2 Three-Tier Security

Three-tier security is enhanced via SSL authentication, using X.509-compliant certificates, Distinguished Names (DN), and integration with Oracle Internet Directory. An extensible, secure application role provides context-based role enablement. A secure application role ensures that a user can only access the database through a middle tier. The result is that user identities are maintained securely through each component of the CPAIS application, with centralized user and privilege management in Oracle Internet Directory**.**

6.5.3 Standards-based Public Key Identification (PKI)

Standards-based PKI includes support for Public Key Certificate Standard (PKCS)#12 wallets, enabling existing PKI credentials to be shared by an Oracle Wallet, thus reducing PKI deployment costs and increasing interoperability. Oracle PKI support provides integration with Oracle Wallets. The CPAIS application is PKI-ready.

6.5.4 Oracle Internet Directory

The CPAIS application improves upon its security features further by capitalizing on another industry standard compliant component of 9iAS. The Oracle Internet Directory (OID) is a Lightweight Directory Access Protocol (LDAP) v3 directory that provides a common framework for user management, password management and authorization. It is in the OID where user accounts are managed centrally and shared across all components in Oracle 9ias. In particular, such components used by the CPAIS application include Forms server, Reports server, Discoverer and Java/J2EE based main menu. When a user logs into the CPAIS main menu, the 9iAS SSO authenticates the userid once against the user's OID credentials, which in turn allows access to multiple components of the CPAIS application seamlessly.

6.5.5 USDA C2 Level of Trust

The CPAIS application is developed in accordance with USDA cyber security guidance where compliance with C2 Level of Trust is referenced in CS-013. Security policy is adhered to in the CPAIS application and enforced by USDA.

Accountability and assurance requirements as described in section 3.4 of the CPAIS Functional Requirements document are enforced by the CPAIS application's authentication and authorization components such as Single Sign-on, and Secure Socket Layer (SSL) as described in the preceding sections.

The security policy, where authorized system administrators control the discretionary access to the application, is enforced at two (2) levels.

- At the user access point, authorization for access is assigned and maintained by respective agencies.

- At the application/database level - Fine Grain Security and role based access is granted to valid users accordingly.

Documentation requirements such as the Security Features User's Guide, is the responsibility of the USDA.

6.6 CPAIS

6.6.1 User Authorization, Identification and Authentication

To prevent unauthorized use of a database username, Oracle provides user validation through several different methods for normal database users. Authentication is performed by:

- The operating system
- A network service
- The CPAIS application database
- The middle-tier application that performs transactions on behalf of the user and includes SSL

Since CPAIS is a web-based 3-tier application, an application server provides data for clients and serves as an interface between clients and one or more database servers. Password authentication of Enterprise Users will take place as follows:

Password-based authentication is used by CPAIS for enterprise users. (SSL is still required to secure connections between the database and Oracle Internet Directory.) Password-authenticated enterprise users can use the same password, securely stored in the LDAP-compliant directory, to authenticate to multiple databases. Administrators can manage both types of user within one directory.

With its reduced processing overhead, improved ease-of-use, and simplified setup and administration, password-authenticated enterprise users are particularly useful for large user communities accessing multiple applications. Enterprise users can use a single enterprise username and password to connect to multiple databases because with single sign-on, the user needs to be authenticated only once.

6.6.2 User Profiles

To comply with USDA C2 security, passwords for CPAIS are to be changed every 60 days for general users. Passwords issued to system administrators, system managers and software engineers are to be changed every 30-45 days.

The CPAIS Security Feature Users Guide (SFUG) requires that passwords be a minimum of eight characters in length, with at least 2 numeric and 2 alphabetic characters and at

most 14 characters. To accomplish this requirement, the CPAIS DBA will establish password policies, such as:

- The maximum length of time a given password is valid
- The minimum number of characters a password must contain
- Passwords must be encrypted and dictionary words shall not be used for passwords
- The ability of users to change their own passwords

6.6.3 Sensitive But Unclassified/ Sensitive Security Information (SBU/SSI) data

All USDA agencies and staff offices must identify and provide adequate security protection for Sensitive But Unclassified (SBU)/Sensitive Security Information (SSI). Therefore a mechanism must be implemented which will classify records as SBU/SSI. The data is designed and structured to separate SBU/SSI information from non-sensitive data. SBU/SSI data should be made available on a need-to-know basis.

6.6.4 Discretionary Access Control (DAC)

See section 6.5.1 for a description of DAC.

6.6.5 SBU Data Available on Need-To-Know Basis

CPAIS SBU data may be accessed only on a need-to-know basis. The web-based reporting tool (Oracle Discoverer) to be used by CPAIS lacks the capability to insert headers and footers where the notice "Sensitive But Unclassified/Sensitive Security Information – Disseminate on a Need-To-Know Basis Only" would normally be displayed. The notice could be displayed in the report title, but this may adversely affect the appearance of the report.

6.6.6 User Auditing

CPAIS will have the capability to maintain an audit trail of actions for the following types of information: the userid who performed a transaction; what was accomplished or attempted; when a transaction occurred; and for system users, the time/date of logon or logoff and the workstations/IP address used.

CPAIS administrators will be able to turn on the capabilities to record different types of "auditable actions," as needed.

A transaction (audit) log will be maintained through the use of built-in Oracle capabilities that monitor insert, update and delete statements for selected tables. The auditing information captured includes: user id, session id, terminal id, name of the object accessed,

operation performed or attempted, completion code of the operation, and the date/timestamp of the transaction.

Tracking of unauthorized access is to be implemented by recording unsuccessful connection attempts to the database server. (Successful connections are also logged). Profiles will be associated with users to control the number of failed connection attempts that are permitted. Profiles can also be enabled to determine the times when connection to the database is permitted.

Further auditing policies are planned using features of the Oracle9i database. The Oracle9i database customizable audit facility allows auditing of database activity by statement, by use of system privilege, by object, or by user. The new fine-grained auditing features allow for definition of specific audit policies that alert administrators to users who misuse data access privileges or perform abnormal queries by providing for attachment of an auditing policy to a table or view to capture a defined user action. This feature allows tracking and detection of unauthorized attempts to query or alter information (e.g., attempts to change data for an admin-org to which a user does not have access).

6.6.7 User Access

The system will be able to create, maintain, and protect from modification or unauthorized access through an audit trail of accesses to the objects it protects.

Fine-grained security, combined with roles, provides two layers of protection for data. Oracle roles limit access to database objects (and data associated with those objects) to authorized users. Roles also prevent unauthorized updates, deletes or creation of data. In addition to roles, CPAIS also provides controlled access through fine-grained security that limits the scope of data access, providing a virtual database where users see only data that is pertinent to their needs. Access to data within tables and views is limited and requires associating users with specific admin-orgs. A CPAIS user, for example, may be restricted through fine-grained security to seeing and working with data only from a specific agency and admin-org within that agency. For example, a Forest Service user can be limited to working with data only within their forest or region.

6.6.8 Object Reuse

CPAIS must follow the requirements regarding Object Reuse (storage object/device storing sensitive data has been cleared of the information before it is used for other purposes).

- Object reuse is the reassignment of medium, such as a disk sector or a memory location, from one person or process to another person or process when the original person or process no longer has a requirement for the disk sector or memory location. In other words, when a disk sector is released by the CPAIS, the disk sector is cleared such that a disk utility cannot be used to extract previously stored information. To be securely reassigned, such medium must contain no residual data from the previous person or process.

- For the CPAIS application, secure object reuse is a security consideration enforced by the operating system of the servers. The System Administrators will configure the operating system to assure enforcement of Object Reuse.

6.7 APPLICATION SECURITY

The CPAIS application includes technical, administrative and managerial controls to prevent unauthorized usage. It is the responsibility of the Security Office to conduct user awareness sessions, inspections, spot checks and to periodically review controls as the application changes to utilize new technologies. Access to CPAIS will be provided to users over the USDA intranet. The computer equipment will be set up at NITC facilities and require that user access as well as system access be compliant with the NITC security policy.

6.7.1 Authorization to Access

Applications for user accounts are processed through a defined process. An online form is available for new users together with instructions for applying for an account. Only users with complete and approved forms can be added to the CPAIS application. Users are reviewed by regional management every 90 days for re-approval and user information is updated or deleted after each review cycle.

6.7.2 Logical Access Controls

Roles are named groups of privileges given within the database to specified database objects and provide a set of easily controlled privileges to defined categories of users based on their responsibilities. They provide access to different features/capabilities within the application, are enforced by the database server, and apply to access from within the application as well as externally.

CPAIS roles should be specifically granted to each user id as appropriate for their tasks. Specific object grants (e.g., to tables, views, etc.) should not be given to users. Instead, roles are provided to support appropriate access to each type of user.

Roles are also granted to other roles in CPAIS, setting up a hierarchy with more comprehensive roles inheriting capabilities of lesser roles.

CPAIS roles are defined in the following tables:

Super User Roles	**Description**
CPAIS_ADMIN_MGR	This role is assigned to system administrator for managing user access and setting up the LOVs.
CPAIS_HQ_MGR	Assumes all RPA/RPM/Generic roles, as needed, to perform responsibilities. Limited number of access privileges for this role in the Department (and one per agency).

Real Property Accounting Roles	Descriptions
RPA_STREAM_MGR	Allows user to create or update current-year adjustment transactions using the Value_stream screen. Assumes RPA_DISPOSAL_MGR role, as needed, to perform responsibilities. Limited number of access privileges for this role by agency.
RPA_DISPOSAL_MGR	Allows user to create or update subledger accounts, and create write-off transactions for disposed assets using the Value_stream screen. Assumes RPA_LOCAL_MGR role, as needed, to perform responsibilities. Access privileges are defined at a management level and within limits.
RPA_LOCAL_MGR	Provides access to create and maintain subledgers, and set developments status. Access privileges are defined at an operational level and within limits.

Real Property Management Roles	Descriptions
RPM_LEASE_MGR	Assumes RPM_PROPERTY_MGR role, and allows user create/update/delete access to lease records and authority to issue GSA OA bill adjustments. Usually property manager is assigned this role.
RPM_PROPERTY_MGR	Allows create/update/delete assets and link them to GSA sites. This role can be assigned to facility engineer, fiscal manager or property manager.
RPM_WK_ITEM_MGR	Allows user to enter and update deferred maintenance work items and facility master plan. This role can be assigned to facility engineer, fiscal manager or property manager.
RPM_OCCUPANCY_ MGR	Allows user to enter occupancy information for their property or the co-location property managed by other agencies.
RPM_COLOCATION_ MGR	Allows user to manage the co-location agreements.

Generic Roles	Descriptions
CONTACT_MGR	Allows user to enter different type of contact data to CPAIS. This role is already inherited by all RPA/RPM roles.
CPAIS_PUBLIC	Allows user to select all objects for viewing and / or reporting.

Roles can be granted to user accounts or to other roles. In CPAIS, these roles are set up in a hierarchical fashion with more comprehensive roles inheriting capabilities of lesser roles, as shown in the table below.

GRANTEE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	rpm lease mgr	rpm property mgr	rpm wk item mgr	rpm occupancy mgr	rpm colocation mgr	cpais read only	contact mgr
cpais_admin_mgr	--	X	X	X	X	X	X	X	X	X	X	X
cpais_hq_mgr		--	X	X	X	X	X	X	X	X	X	X
rpa_stream_mgr			--	X	X						X	X
rpa_disposal_mgr				--	X						X	X
rpa_local_mgr					--						X	X
rpm_lease_mgr						--	X				X	X
rpm_property_mgr							--				X	X
rpm_wk_item_mgr								--			X	X
rpm_occupancy_mgr									--		X	X
rpm_colocation_mgr										--	X	X
cpais_read_only											--	
contact mgr												--
Note: User FSDBA must have CPAIS_ADMIN_MGR role												

In addition to roles, CPAIS provides controlled access through fine-grained security that applies policies for access to specific admin-orgs. Access to sets of data within tables and views is limited and requires associating users with specific admin-orgs. A Region 1 Forest Service user, for example, may be restricted to a single forest in Region 1 (e.g., 0102), to several forests (0102, 0103, 0104, etc) or to the entire Region by adding access for the user for all their forests by admin-org.

The following table associates roles with level of access (Create, Read, Update, Delete, EXECute, Select) to database objects.

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic remote (user name)	rpm lease mgr	rpm property mgr	rpm wk item mgr	rpm occupancy mgr	rpm colocation mgr	contact mgr	cpais read only	contact mgr
DB_INSTANCE	PACKAGE	ALL	EXEC	EXEC	EXEC	EXEC									
II_RPA_ERRORS	**PACKAGE**	**ALL**	**EXEC**												
II_RPA_FROM_FFIS_MT	PACKAGE	ALL	EXEC												

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
II_RPA_GETS	PACKAGE	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_RPA_MT_FORM	PACKAGE	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_RPA_REMOTE	PACKAGE	ALL					EXEC								
II_RPA_REPLICATE	PACKAGE	ALL	EXEC	EXEC	EXEC	EXEC									
II_RPA_RECONCILIATION	PACKAGE	ALL	EXEC												
II_RPA_SNAPSHOT	PACKAGE	ALL	EXEC												
II_RPA_TO_FFIS_MONTHLY	PACKAGE	ALL	EXEC												
II_RPA_UAI_TO_FFIS	PACKAGE	ALL	EXEC												
II_SQL	PACKAGE	ALL													
II_SQL_FUNC	PACKAGE	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_ROW_LEVEL_SECURITY	PACKAGE	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_RPA_CANCEL_DEPR_SCHEDULE	PACKAGE	ALL	EXEC												
II_RPA_CLOSEYEAREND	PROCEDURE	ALL	EXEC												
II_RPA_CREATE_BB_DEPR_FILE	PROCEDURE	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_RPA_CREATE_BB_FILE	PROCEDURE	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_RPA_CREATE_BB_REJ_FILE	PROCEDURE	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_RPA_DEPR	PROCEDURE	ALL	EXEC												
II_RPA_FIX_REJECTS	PROCEDURE	ALL													
II_RPA_PUTINTOSERVICE	PROCEDURE	ALL	EXEC	EXEC											
II_RPA_PYADJ	PROCEDURE	ALL	EXEC	EXEC											
II_RPA_PYADJ_NEW	PROCEDURE	ALL	EXEC	EXEC											
II_RPA_SUB_FWOFF	PROCEDURE	ALL	EXEC	EXEC	EXEC										

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
II_RPA_SUB_PWOFF	PROCEDURE	ALL	EXEC	EXEC											
II_RPA_RUN_DEPR_SCHEDULE	PROCEDURE	ALL	EXEC												
II_RPA_SCHEDULE_DEPR	PROCEDURE	ALL	EXEC												
II_RPA_VS_WOFF	PROCEDURE	ALL	EXEC	EXEC	EXEC										
II_RPA_ADJUSTMENT_ACCOUNTS_SEQ	SEQUENCE	ALL	Sel												
II_RPA_DEPRECIATION_LOG_SEQ	SEQUENCE	ALL													
II_RPA_DEV_STATUS_SEQ	SEQUENCE	ALL	Sel	Sel	Sel	Sel									
II_RPA_DOCUMENTS_SEQ	SEQUENCE	ALL	Sel	Sel	Sel	Sel									
II_RPA_MESSAGE_LOG_SEQ	SEQUENCE	ALL													
II_RPA_MONTHLY_TRANS_SEQ	SEQUENCE	ALL													
II_POOLEDS_CN_SEQ	SEQUENCE	ALL	Sel	Sel	Sel	Sel									
II_RPA_SUBLEDGERS_SEQ	SEQUENCE	ALL	Sel	Sel	Sel	Sel									
II_RPA_VALUE_DOCUMENTS_SEQ	SEQUENCE	ALL	Sel	Sel											
II_RPA_VALUE_STREAMS_SEQ	SEQUENCE	ALL													
II_RPA_VALUE_TRANS_SEQ	SEQUENCE	ALL													
II_MAIN_MENU_CN_SEQ	SEQUENCE	ALL													
II_AGENCY_CODES	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_AGENCY_GROUPS	TABLE	CRUD	R	R	R	R		R	R	R	R	R		R	
II_CONTACTS	TABLE	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	R	R	CRUD	R	CRUD	CRUD	R	CRUD
II_FEA_CNSTR_COST_INDEX	TABLE	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD		CRUD	

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
II_FEA_CONDITIONS	TABLE	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD		CRUD	
II_FEA_PLANNING_STATUS	TABLE	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD		CRUD	
II_FEA_REPLACEMENT_COST	TABLE	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD		CRUD	
II_FEATURES	TABLE	CRUD	R	R	R	R	R	CRUD	CRUD	CRUD	R	CRUD		R	
II_INFRA_SITE_PROFILES	TABLE	CRUD	R												
II_INFRA_SITE_PROF_MSTR	TABLE	CRUD	R												
II_MAIN_MENU	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_MAIN_MENU_ENV_VAR	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_MAIN_MENU_FAVORITES	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_ORGANIZATIONS	TABLE	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	R	CRUD
II_PERSONS	TABLE	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	R	CRUD
II_POOLEDS	TABLE	CRUD	CRUD	R	R	CRUD	R	CRUD	R	R	R	R		R	
II_REPORTS	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_REPORT_SET_PARAMETERS	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_ACCTG_OPEN_PERIODS	TABLE	CRUD	CRU	R	R	R	R	R	R	R	R	R		R	
II_RPA_ADJUSTMENT_ACCOUNTS	TABLE	CRUD	CRUD	R	R	R	R	R	R	R	R	R		R	
II_RPA_ASSETS_V_TAB	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_BOC_MAPPING	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_CO_AUDITS	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_DEPRECIATION_LOG	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_DEV_STATUS	TABLE	CRUD	CRUD	CRUD	R	CRUD	R	R	R	R	R	R		R	

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
II_RPA_DOC_FFC_LINKS	TABLE	CRUD	CRU	R	R	R	R	R	R	R	R	R		R	
II_RPA_DOC_SUB_LINKS	TABLE	CRUD	CRUD	R	R	CRUD	R	R	R	R	R	R		R	
II_RPA_DOCUMENTS	TABLE	CRUD	CRUD	R	R	CRUD	R	R	R	R	R	R		R	
II_RPA_ERROR_LOG	TABLE	R	R												
II_RPA_EVENT_TABLES	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_EVENTS	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_FEA_REFRESH_TEMP	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_FEA_REFRESH_TEMP	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_FISCAL_USERS	TABLE	CRUD	CRUD	R	R	R	R	R	R	R	R	R		R	
II_RPA_FROM_FFIS_CONTROLS	TABLE	CRUD	CRU	R	R	R	R	R	R	R	R	R		R	
II_RPA_GSA_USAGE_CODES	TABLE	CRUD	CRUD	R	R	R	R	R	R	R	R	R		R	
II_LU_FEA_LINKS	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_LNK_REFRESH_TEMP	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_LNK_REFRESH_TEMP_LOG	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_LU_REFRESH_TEMP	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_LU_REFRESH_TEMP_LOG	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_MESSAGE_LIBRARY	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_MESSAGE_LOG	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_MONTHLY_TRANS	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_MONTHLY_TRANS_SNAPSHOT	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
II_RPA_OBJ_SETS	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_OWNERSHIP_MAPPING	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_PROJECT_GROUPS	TABLE	CRUD	CRUD	R	R	R	R	R	R	R	R	R		R	
II_RPA_RECONCLT_LOADED	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_REF_CODES	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_REPL_DEL_LOG	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_SUBLEDGER_AUDITING	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_SUBLEDGER_SETS	TABLE	CRUD	CRUD	R	R	R	R		R	R	R	R		R	
II_RPA_SUBLEDGERS	TABLE	CRUD	CRUD	R	R	CRUD	R	R	R	R	R	R		R	
II_RPA_SUBLEDGER_AUDITING	TABLE	R	R				R	R	R	R	R	R		R	
II_RPA_TO_FFIS_CONTROLS	TABLE	CRUD	CRU	R	R	R	R	R	R	R	R	R		R	
II_RPA_TRANS_CODES	TABLE	CRUD	CRUD	R	R	R	R	R	R	R	R	R		R	
II_RPA_TRANS_TYPES	TABLE	CRUD	CRUD	R	R	R	R	R	R	R	R	R		R	
II_RPA_USE_CODES	TABLE	CRUD	CRUD	R	R	R	R	R	R	R	R	R		R	
II_RPA_USER_ACCESS	TABLE	CRUD	CRUD	R	R	R	R	R	R	R	R	R		R	
II_RPA_VALUE_DOCUMENTS	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_VALUE_STREAMS	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_VALUE_STREAMS_SNAPSHOT	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_VALUE_TRANS	TABLE	CRUD	R	R	R	R	R	R	R	R	R	R		R	
LAND_UNITS	TABLE	CRUD	R	R	R	R	R	CRUD	CRUD	R	R	R		R	

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
II_DB_INSTANCES_INFRA_V	VIEW	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_AGENCY_ORG_ACCESS_V	VIEW	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_BUILD_CAP_V	VIEW	R	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_CANDIDATE_TRANS_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_FEA_SUBLEDGERS_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_IR_SENT_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_LU_SUBLEDGERS_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_MESSAGE_LOG_RPT_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_RECONCLT_LOADED_CAP_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_RECONCLT_LOADED_CDEPR_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_RECONCLT_LOADED_DEPR_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_RECONCLT_LOADED_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_RECONCLT_NOT_RETURNED_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_RECONCLT_NOT_SENT_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_RECONCLT_UNLOADED_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_IR_SENT_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_REPORT_SETS_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_SUB_SUM_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_SUBLEDGERS_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_TRANS_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
II_RPA_VALUE_STREAMS_RPT_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_VALUE_STREAMS_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_VALUE_TRANS_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_WIP_MT_LOADED_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_RPA_WIP_MT_UNLOADED_V	VIEW	ALL	R	R	R	R	R	R		R	R	R		R	
II_RPA_WIP_VALUE_STREAMS_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_CONT_PER	VIEW	R	R	R	R	R	R	R	R	R	R	R	R		R
II_CONT_ORG	VIEW	R	R	R	R	R	R	R	R	R	R	R	R		R
II_PER_SEQ	SEQ								Sel						
II_RPA_REPLICATE							EXEC	EXEC							
II_RPA_VWS	VIEW						CRUD								
********** **RPM APLICATION** **********															
ACCPLISHMENT_INSTRUMENTS	TABLE	CRUD	CRUD				CRUD	CRUD							
II_1166_LEASE_BUILDINGS	TABLE	CRUD	CRUD												
II_1166_LEASE_FOOTER	TABLE	CRUD	CRUD												
II_1166_LEASE_HEADER	TABLE	CRUD	CRUD												
II_1166_LEASE_LAND_UNITS	TABLE	CRUD	CRUD												
II_1166_LEASE_STRUCTURES	TABLE	CRUD	CRUD												
II_1166_OWNED_BUILDINGS	TABLE	CRUD	CRUD												
II_1166_OWNED_LAND_UNITS	TABLE	CRUD	CRUD												

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
II_1166_OWNED_STRUCTURES	TABLE	CRUD	CRUD												
II_1166_USDA_OWNED_HEADER	TABLE	CRUD	CRUD												
II_ACC_INS_AMENDMENTS	TABLE	CRUD	CRUD					CRUD							
II_ACQUISITION_METHOS	TABLE	CRUD	CRUD					CRUD							
II_ACCINST_CONT_LINKS	TABLE	CRUD	CRUD									CRUD			
II_ACC_INS_AMENDMENTS	TABLE	CRUD	CRUD					CRUD							
II_AGENCY_CERTIFICATION	TABLE	CRUD	CRUD												
II_BLDG_ACCESS_STATUS	TABLE	CRUD	CRUD					CRUD	CRUD	R	R	R		R	
II_BLDG_FLOORS_ROOMS	TABLE	CRUD	CRUD					CRUD	CRUD	R	R	CRUD		R	
II_BLRG_FLR_RM	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_BLDG_FLOORS_ROOMS_LEASED	TABLE	CRUD	CRUD					CRUD							
II_BLDG_PERSONNEL	TABLE	CRUD	CRUD					CRUD	CRUD	R	R	CRUD		R	
II_BLDG_FUEL	TABLE	CRUD	CRUD					CRUD	CRUD						
II_BLDG_HAZARDS	TABLE	CRUD	CRUD					CRUD	CRUD						
II_BLDG_RENEW_ENERGY	TABLE	CRUD	CRUD					CRUD	CRUD						
II_BLDG_SECURITY	TABLE	CRUD	CRUD					CRUD	CRUD						
II_BLDG_SECURITY_STDS	TABLE	CRUD	CRUD					CRUD	CRUD						
II_BUILDINGS	TABLE	CRUD	CRUD					CRUD	CRUD			CRUD			
II_CONT_PER	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_CONT_ORG	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_DOC_ACCINST_LINKS	TABLE	CRUD	CRUD									CRUD			

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
II_DOCUMENTS	TABLE	CRUD	CRUD									CRUD			
II_FEA_CONDITIONS	TABLE	CRUD	CRUD					CRUD	CRUD	R	R	R		R	
II_FEA_COORDS	TABLE	CRUD	CRUD					CRUD	CRUD	R	R	R		R	
II_FEA_CONT_LINKS	TABLE	CRUD	CRUD					CRUD	CRUD	R	R	R		R	
II_FEA_PLANNING_STATUS	TABLE	CRUD	CRUD					CRUD	CRUD	CRUD	CRUD	CRUD		CRUD	
II_FEA_REPLACEMENT_COST	TABLE	CRUD	CRUD	R	R	R	R	CRUD	CRUD	R	R	R		R	
II_GA_AUTHORITIES	TABLE	CRUD	CRUD									CRUD			
II_GA_BLDG_COSTS	TABLE	CRUD	CRUD									CRUD			
II_GA_COOPERATORS	TABLE	CRUD	CRUD									CRUD			
II_GA_CONTACTS	TABLE	CRUD	CRUD									CRUD			
II_GA_FUNDS	TABLE	CRUD	CRUD									CRUD			
II_GA_GPRAS	TABLE	CRUD	CRUD									CRUD			
II_GA_MODS	TABLE	CRUD	CRUD									CRUD			
II_GA_PAYMENTS	TABLE	CRUD	CRUD									CRUD			
II_GA_PROPERTIES	TABLE	CRUD	CRUD									CRUD			
II_GA_TENANT_BILL	TABLE	CRUD	CRUD									CRUD			
II_GA_TENANT_BILL_DETAILS	TABLE	CRUD	CRUD									CRUD			
II_GA_TENANT_DATES	TABLE	CRUD	CRUD									CRUD			
II_GA_TENANT_NO_SHR_SPACE_ASN	TABLE	CRUD	CRUD									CRUD			
II_GSA_GEO_LOC_CODES	TABLE	CRUD	CRUD					CRUD	R	R	R	R		R	
II_GSA_HIGHEST_BEST_USES	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_GSA_INSTALLAT	TABLE	R	R	R	R	R	R	CRUD	CRUD	R	R	R		R	

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
IONS															
II_GSA_INSTALLATION_SITES	TABLE	CRUD	CRUD	R	R	R	R	CRUD	CRUD	R	R	R		R	
II_GSA_NSTLLN_CNGRSS_DSTRCTS	TABLE	CRUD	CRUD					CRUD							
II_GSA_REGION_CODES	TABLE	R	R	R	R	R	R	R	R	R	R			R	
II_GSA_RENT_BILL	TABLE	R	R					R							
II_GSA_USAGE_CODES	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_GRANTS	TABLE	CRUD	CRUD									CRUD			
II_LAND_ACQUISITIONS	TABLE	CRUD	CRUD					CRUD							
II_LEASE_LINE_ITEMS	TABLE	CRUD	CRUD					CRUD							
II_LEASE_NOTIFICATIONS	TABLE	CRUD	CRUD				CUD	CRUD							
II_LEASES	TABLE	CRUD	CRUD	R	R	R	R	CRUD	R	R	R	R		R	
II_LINK_TYPES	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_LU_CONT_LINKS	TABLE	CRUD	CRUD						CRUD						
II_MONTHS_YEARS	TABLE	CRUD	CRUD									CRUD			
II_OBJECTS	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_OBJECT_SETS	TABLE													R	
II_ORGANIZATIONS	TABLE	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	R	CRUD
II_PERSONS	TABLE	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	CRUD	R	CRUD
II_PROPERTY_ADDRESSES	TABLE	R	R	R	R	R	R	CRUD	CRUD	R	R	R		R	
II_ROA_ADJUSTMENTS	TABLE	CRUD	CRUD					CRUD							
II_ROA_LINE_ITEMS	TABLE	CRUD	CRUD					CRUD							
II_ROA	TABLE	CRUD	CRUD					CRUD							
II_SCIENTISTS	TABLE	CRUD	CRUD					CRUD	CRUD					R	

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
II_TASKS	TABLE	CRUD	CRUD							CRUD					
II_UTIL_DATA_CURRENT	TABLE	R	R												
II_ZIPCODES	TABLE	R	R	R	R	R	R	R	R	R	R	R		R	
II_1166_SUMMARY_VW	VIEW	ALL	R												
II_ACC_INSTR_LEASE_MV	VIEW	ALL	R					R							
II_ACCINST_GRANTS_V	VIEW	ALL	R					R				R			
II_ACCOMP_INSTRU_VW	VIEW	ALL	R					R							
II_BLDG_LU_OTHER_LI_VW	VIEW	ALL	R					R							
II_BLD_SUBTYPE_SUBCAT_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_CURR_UTIL_DATA_VW	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_FEAT_BLD	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_FEAT_OTHER	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_GSA_ADJUSTMENT_TYPE_VW	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_GSA_CHARGE_TYPE_VW	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_GSA_GEO_CITY_VW	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_GSA_GEO_COUNTY_VW	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_GSA_GEO_STATE_VW	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_GSA_INST_AND_SITE_VW	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_GSA_INSTALLATION_MV	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_GSA_INSTALLATION_VWS	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_GSA_NSTLLN_CNGRSS_DSTRCTS	VIEW														

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
II_LAND_ACQUISITION_VWS	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_LEASE_BY_REGION_V	VIEW	ALL	R					R							
II_LEASE_LESSOR_SUMMARY_V	VIEW	ALL	R					R							
II_LEASE_LINE_ITEMS_V	VIEW	ALL	R					R							
II_LEASE_SRVC_CODE_VW	VIEW	ALL	R					R							
II_LEASE_VWS	VIEW	ALL	R				CRUD	R							
II_NON_FGRAIN_BLD_V	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_OBJ_II_CODES_OTH_FEA_VW	VIEW	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_ROA_PROPERTY_VW	VIEW	ALL	R					R							
II_ROA_RENT_COMP_VW	VIEW	ALL	R					R							
II_TENANT_AGCY_CURR_SPACE_VW	VIEW	ALL	R									R			
II_TENANT_BILL_BY_USAGE_VW	VIEW	ALL	R									R			
ACCINST_CN_SEQ	SEQUENCE	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_CONT_ID_SEQ	SEQUENCE	ALL	R	R	R	R	R	R	R	R	R	R		R	
FEAT_CN_SEQ	SEQUENCE	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_GA_SEQ	SEQUENCE	ALL	R									R			
II_PROT_SEQ	SEQUENCE	ALL	R	R	R	R	R	R	R	R	R	R		R	
LU_CN_SEQ	SEQUENCE	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_PROP_ADDR_SEQ	SEQUENCE	ALL	R					R							
II_RPM_CONV_LOG_CN	SEQUENCE	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_SCIENTISTS_SEQ	SEQUENCE	ALL	R	R	R	R	R	R	R	R	R	R		R	
II_AI_CREATE_LEA		ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	

OBJECT_NAME	TYPE	cpais admin mgr	cpais hq mgr	rpa stream mgr	rpa disposal mgr	rpa local mgr	ic re-mote (user name)	rpm lease mgr	rpm proper-ty mgr	rpm wk item mgr	rpm occu-pancy mgr	rpm coloca-tion mgr	con-tact mgr	cpais read only	contact mgr
SE_MOD															
II_AI_CREATE_GSA_MOD		ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_CALC_UTIL_ALL_AGCY		ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_CALC_UTIL_ALL_AGC		ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_CALC_UTIL_AGCY		ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_GET_BLD_IN_SVC_DT	FUNCTION	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_GET_BLDG_ID		ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_GET_CAP_VAL_FEA	FUNCTION	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_GET_CAP_VAL_POOL	FUNCTION	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_GET_FEA_LLI_USECD	FUNCTION	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_GET_GSA_INST_CDS	FUNCTION	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_GET_LU_LLI_USE_CD	FUNCTION	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_RPM_GETS		ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_LEASEUSAGEPRI_FNC	FUNCTION	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_LEASE_PKG	PACKAGE	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_RPM_GET_CONG_DIST		ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_RPM_GETS		ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
II_TRANSACTION	PACKAGE	ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	
SUBMIT_AGENCY_JOB		ALL	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC	EXEC		EXEC	

Restricted Public accounts are provided with passwords controlled and can be used to allow viewing (but not updating, deleting or insertion of records) for sets of admin-orgs within agencies.

Users connect to the database by accessing the system through the Oracle 9iAS application server and thus have no access to the operating system on the system running the database server.

Sessions are expired after 15 minutes of inactivity (with a setting on the Oracle 9i application server). Continued use of the application requires the user to sign-on again.

6.7.3 Audit Trails

6.7.3.1 RPM JOURNALING ON DEMAND

Changes on Leases and Rental Occupancy Agreements (ROAs) contracts, where data are stored on hierarchical data structures, will be handled with journaling on demand basis.

After data entry fields in the Lease or ROA forms have been updated, the user can select to save the current version of the contract by pressing a button. The associated records will be saved in the database with a new sequence number, intended for identification and tracking purposes.

The old contract will be easily traced with its sequence number, defining its context, on an overflow right form layout tab, provided within the Lease and ROA forms. The user will be able to select and view historical information about a contract, from descending sequence numbers and dates generated by the system. The latest historical changes will be displayed first.

The application will prevent users from modifying records on any contract that have been journaled and saved, consequently, a complete and accurate history of all records on a specific contract will be maintained.

A new set of records with the most up-to-date contract information are duplicated, every time a journaling action is initiated. New primary keys are being generated and propagated for tracking the new entries. The new records will be used to maintain current information about the contract, until a new journaling action will be performed, which will convert the current records to view only. As a result, the complete history of a contract will be stored in the same set of tables as the current status of the contract.

6.7.3.2 RPM AUDIT COLUMNS

The following four types of audit columns associated with each main table record of the RPM application, will provide for tracing information.

- Created By
- Date Created
- Modified By
- Date Modified

These columns will track who created the record and when an insert took place, while similar information will be supplied on record updates.

6.7.3.3 RPA AUDITING

Real property accounting system has four sets of data: assets, subledgers, FFIS transactions, value streams to audit. Each set is audited differently.

An asset record (either land unit, feature or pooled) cannot be deleted if it has a subledger record associated. CREATED_BY and CREATED_DATE are part of a record. Any significant changes to an asset are audited. Presently, changes on column OBJ_CLASS, OBJ_NAME, SUB_TYPE are considered significant from accounting perspective. A list of audited columns can be easily expanded. Auditing includes when a change happened, who did, and what old and new values are.

A subledger record cannot be deleted if it has been used, that is, there is any value stream associated with it. CREATED_BY and CREATED_DATE are part of a record. When and who deleted are audited. Any significant changes to a subledger are audited. Presently, changes on column ADMIN_ORG, PROJECT_GROUP, CAPITAL_PROJECT_NO are considered significant from accounting perspective. A list of audited columns can be easily expanded. Auditing includes when a change happened, who did, and what old and new values are.

FFIS transactions cannot be deleted. CREATED_BY and CREATED_DATE are part of a transaction record. More creating information is kept in table ii_rpa_from_ffis_control. Any allowable changes are directly reflected into value streams. Therefore, auditing of value streams also audits FFIS transactions.

Value streams cannot be deleted. CREATED_BY and CREATED_DATE are part of a value stream record. Any significant change will make a replacement. The chain of replacement is an auditing trail by itself. Who and when and why a change happened are also kept as part of a value stream record.