SOX Control CA-1403987 (Legacy ID-IT-SEC-R6)

2018 FCU Universal Control/Risk/ Objective (Risk – Medium, Frequency - Annual)
Password Parameters -Logical Security - Inadequate Authentication Mechanisms Automated access control systems and proper authentication methods are implemented and consistently enforced to prevent unauthorized access.

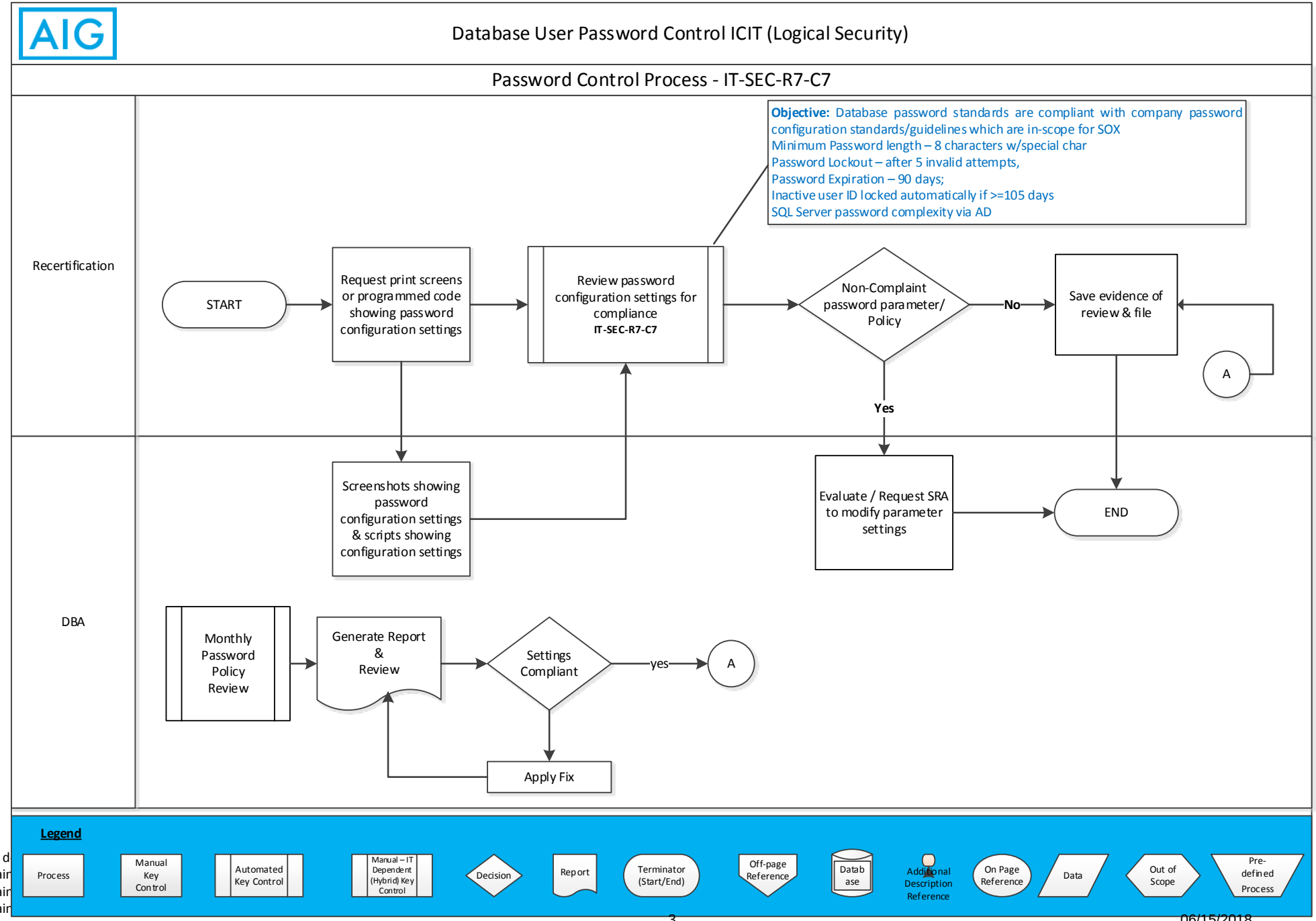
2017 Control Description (Risk –)	
Summary / Description	**Control Supporting Information**
Password Parameters (SSO) All ID's (including system and functional IDs) at the network, application, database, and operating systems level are in compliance with the following AIG password requirements: a. Password Length - 8 characters b. Password Maximum Age - 90 days c. Lockout After - 5 invalid attempts d. If password settings deviate from AIG password requirements, rational should be documented and risk acceptance should created.	This control is centered upon the servers that are managed by the ICIT Production Services group (LINUX, vCenter, non R-CORE domains); and the ICIT Production DBA team (EXADATA, SQL Server, ORACLE)

AIG

On 04/13/2018, Ajay Jain verified that the above control description is up to date for 2018.

This document is intended to obtain information requested, "evidences", from Process Owners for our FCU-SOX 2018 ITGC Testing. Such, "evidences", can be obtained either before, during or after our FCU-SOX 2018 ITGC Walkthroughs. Additionally, please noted SOME, "evidences", generated from control owners and obtained before walkthroughs should required from us to be re-generate and observe during walkthroughs for a "sample of one". Please noted we required to obtained, "sample of one" to observe completeness and accuracy of total population.

Access Control – Password Complexity A B



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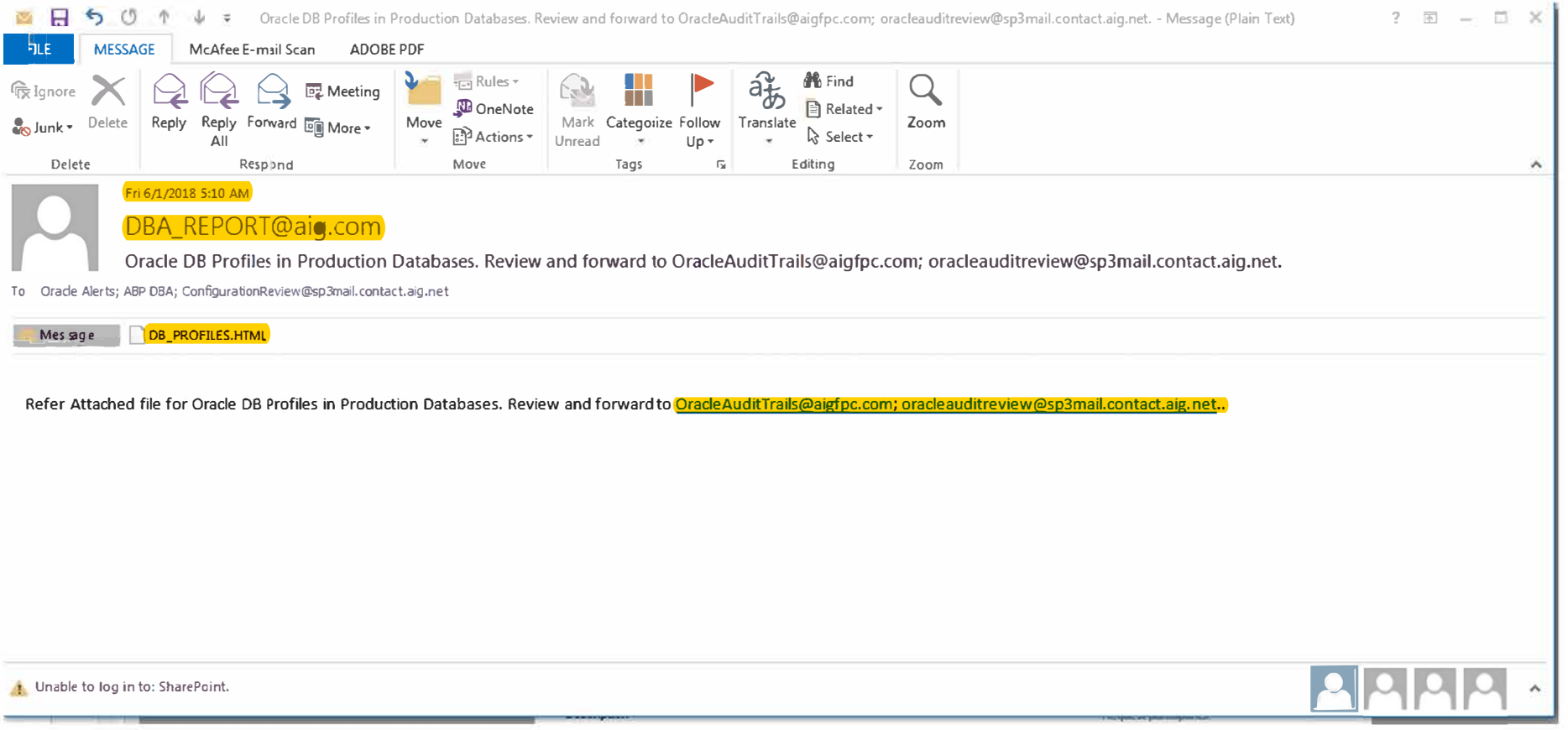
SAMPLE OF ONE - PASSWORD PARAMETERS FOR ORACLE--> MONTHLY REPORT SCRIPT

Please noted below screenshot (04/13/2018) showing the script that generates the Monthly System Generated Report (DB_PROFILES_HTML) included on AUTOMATED MONTHLY REPORT EMAIL (see Pg. 5) used by ICIT DBA team to perform reviews of the password security settings on a monthly basis via the DBA checklist to verifies for compliance.

```
SQL_TEXT :=
   'Insert into dbadmin.dba_profile_all_db (db_name,profile,resource_name, limit,run_date) ';
SQL_TEXT :=
      SQL_TEXT
   || ' Select * from ( Select (select global_name from global_name@'
   || db_link
   || ') db_name, profile, resource_name, limit, sysdate ';
SQL_TEXT := SQL_TEXT || ' from sys.dba_profiles@' || db_link;
SQL_TEXT :=
      SQL_TEXT
   || ' where resource_name in (''PASSWORD_VERIFY_FUNCTION'',''FAILED_LOGIN_ATTEMPTS'',''PASSWORD_REUSE_MAX'',''PASSWORD_LIFE_TIME'',''PASSWORD_GRACE_TIME'') '
   || 'and profile not like '
   || ''''
   || 'DUMMY%'
   || ''''
   || ' order by profile )';

DBMS_OUTPUT.PUT_LINE (SQL_TEXT);

EXECUTE IMMEDIATE SQL_TEXT;

COMMIT;

-- Collect Verify Function

SQL_TEXT :=
   'Insert into dbadmin.dba_profile_fn_all_db (db_name,name,line,text, run_date) ';
SQL_TEXT :=
      SQL_TEXT
   || ' Select * from ( Select (select global_name from global_name@'
   || db_link
   || ') db_name, name,line, text, sysdate ';
SQL_TEXT := SQL_TEXT || ' from sys.dba_source@' || db_link;
SQL_TEXT :=
      SQL_TEXT
   || ' where owner=''SYS'' and name like ''VERIFY_FUNCTION%'' order by line)';

DBMS_OUTPUT.PUT_LINE (SQL_TEXT);

EXECUTE IMMEDIATE SQL_TEXT;

COMMIT;
```

SAMPLE OF ONE - PASSWORD PARAMETERS FOR ORACLE --> AUTOMATIC MONTHLY EMAIL -
Please see below Automated Monthly Email (06/01/2018) including the Monthly (June) System Generated Report,DB_PROFILES_HTML, ORACLE DB Profiles in Production Database for Password Configuration.
Source: **Sample Data - shared.zip --> 2.CA-1403987 - Password Parameters-> Oracle DB Profiles in Production Databases Review and forward to OracleAuditTrails@aigfpc com oracleauditreview@sp3mail contact aig net .msg**



AIG ABP BITS Dashboards Projects Issues Service Desk Agile Create Search

FILTERS

New filter

Find filters

My Open Issues

Reported by Me

Recently Viewed

All Issues

FAVORITE FILTERS

You don't have any favorite filters.

Search

Save as

Share Export Tools

text ~ "Oracle DB Profiles in Production Databases. Review and forward to OracleAuditTrails@aigfpc.com; oracleauditreview@sp3mail.contact.aig.net." ORDER BY created DESC

Basic

1–36 of **36**

Columns

T	Key	Summary	Assignee	Reporter	Status	Resolution	Created	Updated	Application
	ABPDBA-9993	Oracle DB Profiles in Production Databases. Review and forward to OracleAuditTrails@aigfpc.com; oracleauditreview@sp3mail.contact.aig.net.	*Unassigned*	DBA_REPORT@aig.com	RESOLVED	Fixed	06/01/18	06/14/18	
	ABPDBA-9661	Oracle DB Profiles in Production Databases. Review and forward to OracleAuditTrails@aigfpc.com; oracleauditreview@sp3mail.contact.aig.net.	*Unassigned*	DBA_REPORT@aig.com	RESOLVED	Fixed	05/01/18	06/14/18	
	ABPDBA-9369	Oracle DB Profiles in Production Databases. Review and forward to OracleAuditTrails@aigfpc.com; oracleauditreview@sp3mail.contact.aig.net.	Thomson Thomas	DBA_REPORT@aig.com	RESOLVED	Fixed	04/02/18	04/16/18	
	ABPDBA-9354	Oracle DB Profiles in Production Databases. Review and forward to OracleAuditTrails@aigfpc.com; oracleauditreview@sp3mail.contact.aig.net.	Thomson Thomas	DBA_REPORT@aig.com	RESOLVED	Fixed	04/01/18	04/16/18	
	ABPDBA-9086	Oracle DB Profiles in Production Databases. Review and forward to OracleAuditTrails@aigfpc.com; oracleauditreview@sp3mail.contact.aig.net.	Thomson Thomas	DBA_REPORT@aig.com	RESOLVED	Fixed	03/01/18	03/20/18	
	ABPDBA-8842	Oracle DB Profiles in Production Databases. Review and forward to OracleAuditTrails@aigfpc.com; oracleauditreview@sp3mail.contact.aig.net.	*Unassigned*	DBA_REPORT@aig.com	RESOLVED	Fixed	02/01/18	02/05/18	
	ABPDBA-8531	Oracle DB Profiles in Production Databases. Review and forward to OracleAuditTrails@aigfpc.com; oracleauditreview@sp3mail.contact.aig.net.	*Unassigned*	DBA_REPORT@aig.com	RESOLVED	Fixed	01/01/18	01/02/18	

SAMPLE OF ONE - PASSWORD PARAMETERS FOR ORACLE --> JIRA TOOL used as stored repository for the MONTHLY ORACLE DB PROFILES IN PRODUCTION DATABASE REVIEW :

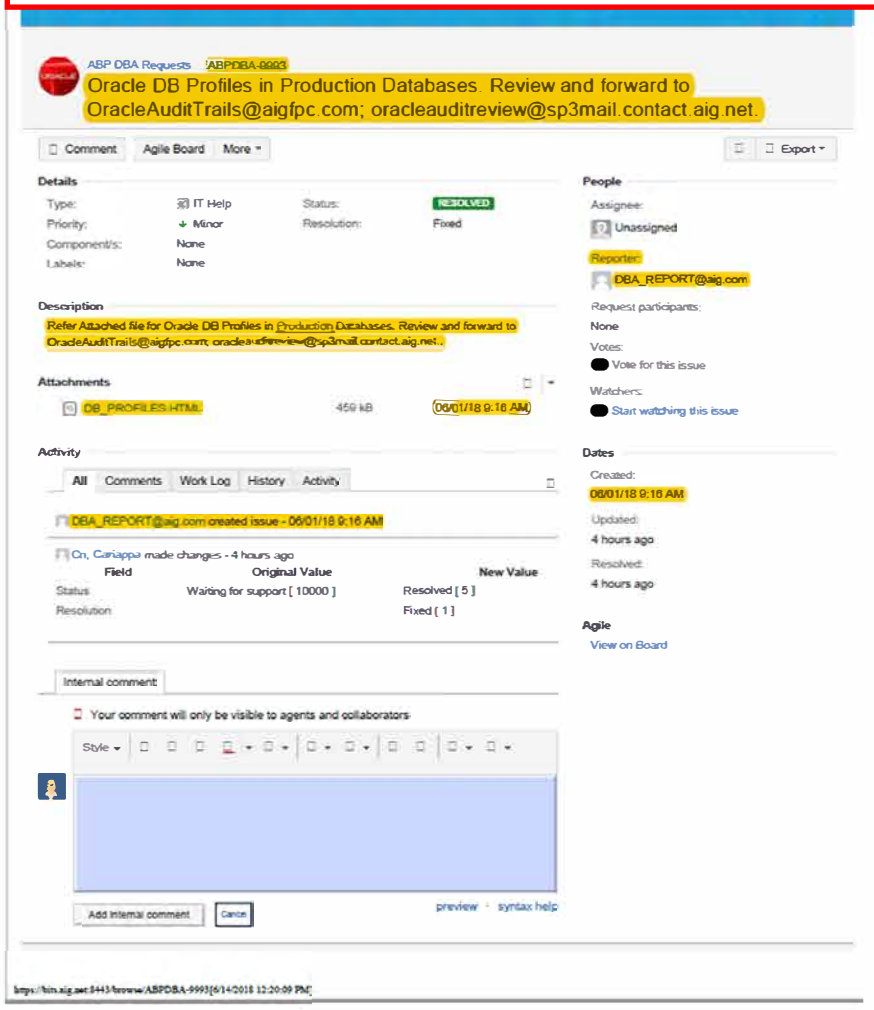
Please see above from JIRA Tool --> Project - ABPDBA-#--->Query =text ~ "*Oracle DB Profiles in Production Databases. Review and forward to OracleAuditTrails@aigfpc.com; oracleauditreview@sp3mail.contact.aig.net." ORDER BY created DESC"*
showing the 2018 Monthly (Jan to Jun) ICIT DBA team reviews of the password security settings on a monthly basis.

SAMPLE OF ONE - PASSWORD PARAMETERS FOR ORACLE--> JIRA TICKET --->ABP DBA Requests ABPDBA-9993 (06/01/2018)

Please see below screenshot from https://bits.aig.net:8443/browse/ABPDBA-9993 showing ORACLE password security settings review for FULL DB Population (ORACLE=17) and ORACLE PROFILES (27). See attachment(s):

a. ABPDBA-9993] Oracle DB Profiles in Production Databases. Review and forward.pdf (Jira Ticket)

b. DB_PROFILES_HTML.pdf (Monthly (June) System Generated Report,DB_PROFILES_HTML, ORACLE DB Profiles in Production Database for Password Configuration.



SAMPLE OF ONE - ABP DBA Requests ABPDBA-9993 (06/01/2018) - ORACLE DATABASE- CTPROD.AIGFPC.COM (1 of 4)

FCU examined a judgmental SAMPLE OF ONE ORACLE DATABASE- CTPROD.AIGFPC.COM nothing Password configuration policy comply with AIG standards as below:

1. FCU extracted Table <8. DB Profile in: CTPROD.AIGFPC.COM> from DB_PROFILES_HTML.pdf. See attachment - DB_PROFILES_HTML.pdf
2. FCU obtained on 6/14/2017 the System Generated Report of Users/Roles, Oracle_DB_User_List.csv. See attachment - Oracle DB Security Info.msg
3. FCU obtained the System Generated Oracle DB Users (showing Account Type: Physical User or System/Service Account) from Archer # 2612510 - SOX_Evidence_Collection.pdf. See attachment: Sample Data - shared.zip --> 1.CA-1402997 - Access Recertification RCMS Recert Extract Data Screen Prints.xlsx file
4. FCU matched the 3 above files and identify the ORACLE Profiles (System/Services Accounts Vs User Accounts) and for verification of the ORACLE Password Configuration in compliance with AIG Password Requirements as below:

.

AIG PASSWORD SETTINGS	ORACLE PASSWORD SETTINGS	COMPLIANCE VALUES
PASSWORD LENGTH	PASSWORD_VERIFY_FUNCTION	8 CHARACTERS
PASSWORD MAXIMUM AGE	PASSWORD_LIFE_TIME	90 DAYS
LOCKOUT AFTER	FAILED_LOGIN_ATTEMPTS	5 INVALID ATTEMPTS

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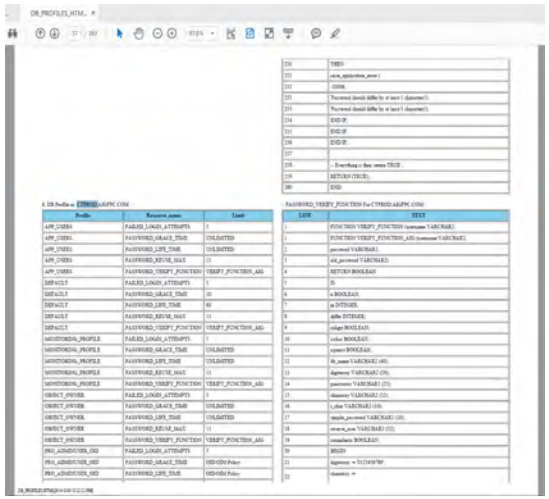
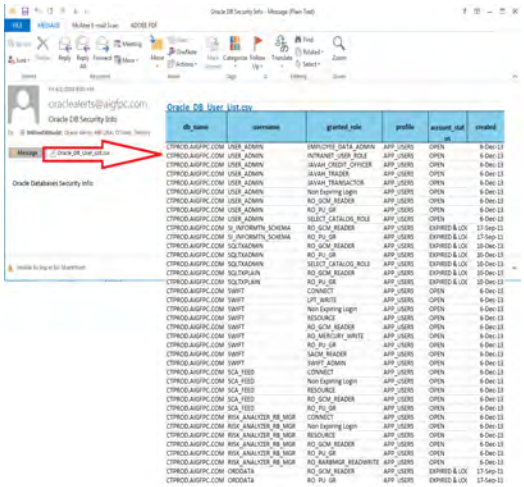
As per above, FCU corroborate ONLY System / Services Accounts present system limitations preventing compliance with AIG settings. However, no relevant exception are noted, as per IT Policies & Supporting Standards- Policy Document: AIG AUTHENTICATION AND CREDENTIALS MANAGEMENT STANDARD, Issued: 05/12/2017. See attachment AIG Authentication and Credentials Management Standard.pdf Pg. 4, emphasize" Where technically possible, technology components supplied by vendors and manufacturers must be able to accommodate AIG password requirements"

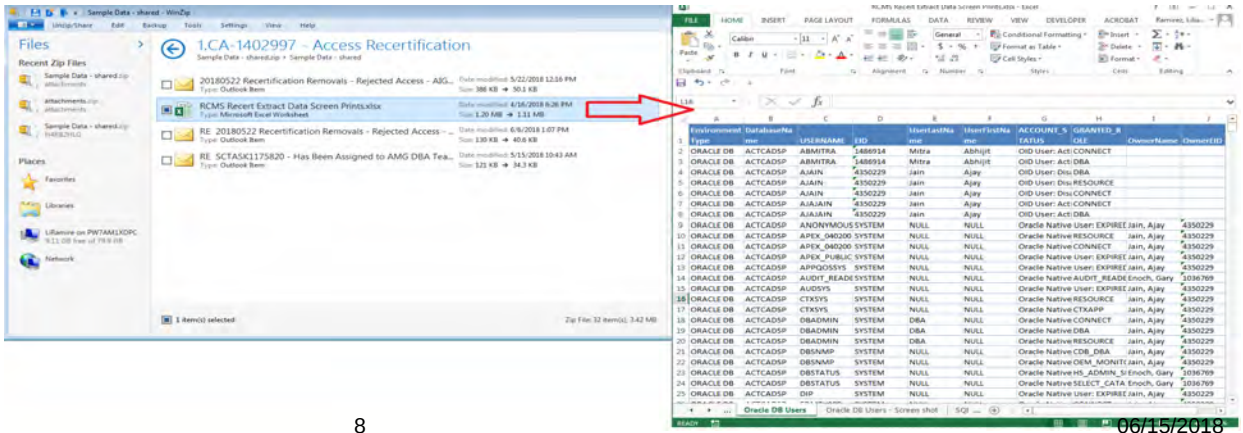
1) DB_PROFILES_HTML.pdf



2) Oracle_DB_User_List.csv



3) Access Recertification RCMS Recert Extract Data Screen Prints.xlsx



SAMPLE OF ONE - ABP DBA Requests ABPDBA-9993 (06/01/2018) - ORACLE DATABASE- CTPROD.AIGFPC.COM (2 of 4)

Oracle_DB_User_List.csv

db_name	username	granted_role	profile	RCMS Recert Extract Data Screen Prints.xlsx TAB<Oracle DB	account_status	created	RCMS Recert Extract Data		
							Environm	Database	USERNAME
CTPROD.AIGFPC.COM	OPS$XIAZHAO	CI		131639			E D	CTPROD	CLIENT_ADM
CTPROD.AIGFPC.COM	OPS$XIAZHAO	JA		131639			E D	CTPROD	CLIENT_ADM
CTPROD.AIGFPC.COM	OPS$YLITVIN	A		131064			E D	CTPROD	CLIENT_ADM
CTPROD.AIGFPC.COM	OPS$YLITVIN	CI		131064			E D	CTPROD	CLIENT_ADM
CTPROD.AIGFPC.COM	OPS$YLITVIN	C		131064			E D	CTPROD	CLIENT_ADM
CTPROD.AIGFPC.COM	OPS$YLITVIN	R		131064			E D	CTPROD	CLIENT_ADM
CTPROD.AIGFPC.COM	OPS$YLITVIN	R		131064			E D	CTPROD	CLIENT_ADM
CTPROD.AIGFPC.COM	OPS$VSAWANT	C		528784			E D	CTPROD	CORPACTIO
CTPROD.AIGFPC.COM	OPS$SCHOBANYAN	R		435019			E D	CTPROD	DATA
CTPROD.AIGFPC.COM	OPS$SCHOBANYAN	S		435019			E D	CTPROD	DATA
CTPROD.AIGFPC.COM	OPS$SCLEMONS	R		108328			E D	CTPROD	DATA
CTPROD.AIGFPC.COM	OPS$SCLEMONS	R		108328			E D	CTPROD	DATA
CTPROD.AIGFPC.COM	OPS$SGANLEY	C		321621			E D	CTPROD	DATA_ADM
CTPROD.AIGFPC.COM	OPS$SGANLEY	D		321621			E D	CTPROD	DATA_ADM
CTPROD.AIGFPC.COM	OPS$SGANLEY	O		321621			E D	CTPROD	DATA_ADM
CTPROD.AIGFPC.COM	OPS$SGANLEY	R		321621			E D	CTPROD	DATA_TEST
CTPROD.AIGFPC.COM	OPS$SGANLEY	R		321621			E D	CTPROD	DATA_TEST
CTPROD.AIGFPC.COM	OPS$SGANLEY	S		321621			E D	CTPROD	DATA_TEST
CTPROD.AIGFPC.COM	OPS$THOHILL	A		321618			E D	CTPROD	DOWNGRAD
CTPROD.AIGFPC.COM	OPS$THOHILL	C		321618			E D	CTPROD	DOWNGRAD
CTPROD.AIGFPC.COM	OPS$STEMURRAY	O		435056			E D	CTPROD	EUR_ABS_U
CTPROD.AIGFPC.COM	OPS$STEMURRAY	R		435056			E D	CTPROD	EUR_ABS_U
CTPROD.AIGFPC.COM	OPS$STEMURRAY	S		435056			E D	CTPROD	EUR_ABS_U
CTPROD.AIGFPC.COM	OPS$SPARTHA1	WRAP_HOLDINGS_WRITE	DEFAULT	1405765	OPEN	28-Feb-18	ORACLE D	CTPROD	FLOWS_FILE
CTPROD.AIGFPC.COM	OPS$SSENGUPT	LUNCH_USER	DEFAULT	1402386	EXPIRED &	6-Dec-13	ORACLE D	CTPROD	GAP_MGR
CTPROD.AIGFPC.COM	OPS$SSENGUPT	RO_GCM_READER	DEFAULT	1402386	EXPIRED &	6-Dec-13	ORACLE D	CTPROD	GAP_MGR
CTPROD.AIGFPC.COM	OPS$SSENGUPT	RO_PU_GR	DEFAULT	1402386	EXPIRED &	6-Dec-13	ORACLE D	CTPROD	GAP_MGR_
CTPROD.AIGFPC.COM	OPS$RBENTON	CONFIRM	DEFAULT	4350373	OPEN	6-Dec-13	ORACLE D	CTPROD	INTRANET_
CTPROD.AIGFPC.COM	OPS$RBENTON	RO_GCM_READER	DEFAULT	4350373	OPEN	6-Dec-13	ORACLE D	CTPROD	IRFX_GAMM
CTPROD.AIGFPC.COM	OPS$RBENTON	RO_PU_GR	DEFAULT	4350373	OPEN	6-Dec-13	ORACLE D	CTPROD	IRFX_GAMM
CTPROD.AIGFPC.COM	OPS$SPARTHA1	ENOTEBOOK	DEFAULT	1405765	OPEN	28-Feb-18	ORACLE D	CTPROD	LEGAL
CTPROD.AIGFPC.COM	OPS$SPARTHA1	RO_GCM_READER	DEFAULT	1405765	OPEN	28-Feb-18	ORACLE D	CTPROD	LEGAL
CTPROD.AIGFPC.COM	OPS$SPARTHA1	RO_PU_GR	DEFAULT	1405765	OPEN	28-Feb-18	ORACLE D	CTPROD	LEGAL
CTPROD.AIGFPC.COM	OPS$SPARTHA1	SVWCRUDROLE	DEFAULT	1405765	OPEN	28-Feb-18	ORACLE D	CTPROD	LEGAL
CTPROD.AIGFPC.COM	OPS$SPARTHA1	SVWREADROLE	DEFAULT	1405765	OPEN	28-Feb-18	ORACLE D	CTPROD	LINK_USER

Sort A to Z
Sort Z to A
Sort by Color
Clear Filter From "profile"
Filter by Color
Text Filters
Search
(Select All)
DEFAULT
PRO_ADMINUSER_OID
PRO_APPDEV_OID
OK
Cancel

Sort A to Z
Sort Z to A
Sort by Color
Clear Filter From "RCMS Recert Extra..."
Filter by Color
Text Filters
Search
5282311
5283731
5285107
5287843
5287976
5288467
5289273
5292613
S0006567
SYSTEM
OK
Cancel

4:18 PM
6/14/2018

FCU identified Physical Accounts (Users/EID) as below:

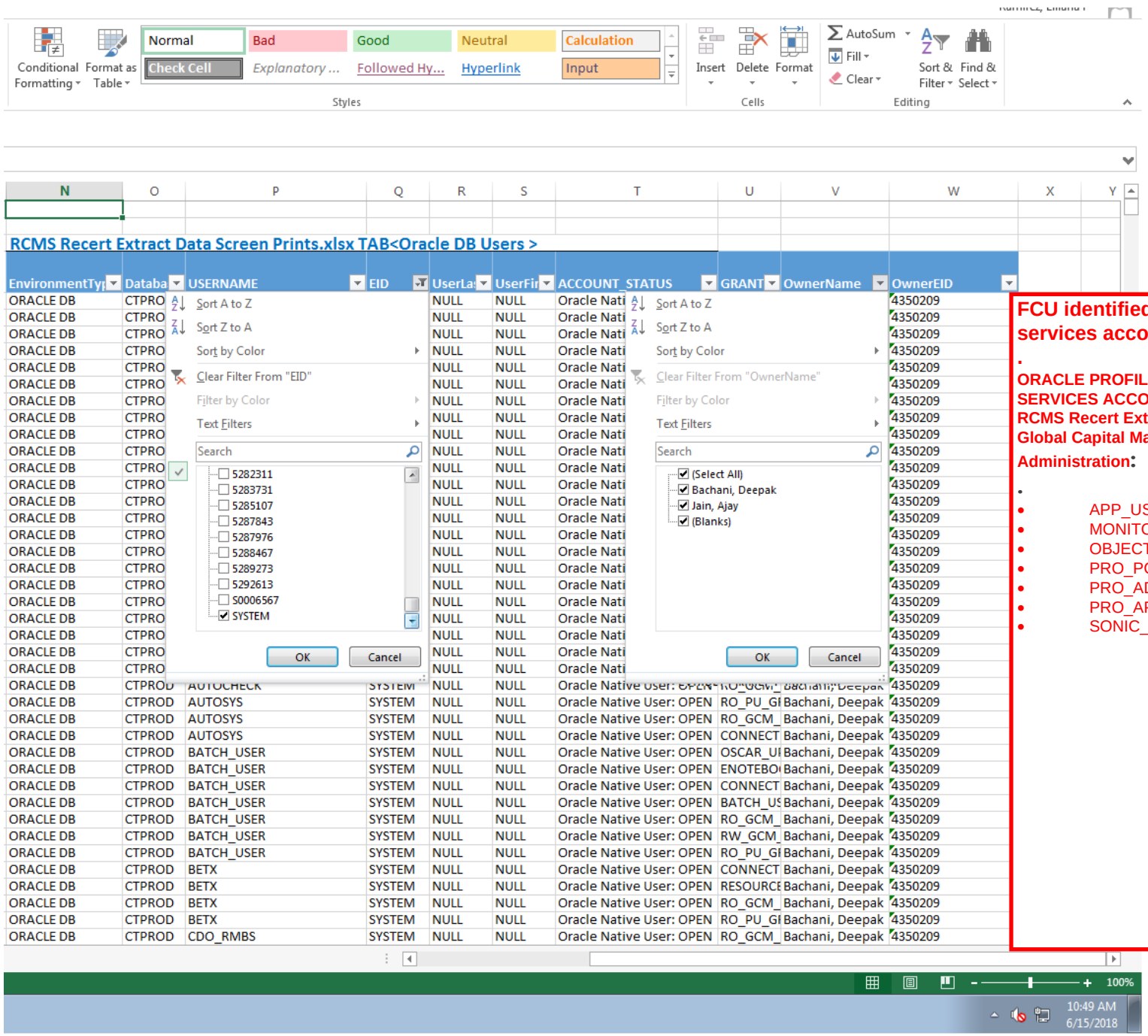
.

ORACLE PROFILE ASSIGNED TO PHYSICAL ACCOUNTS (USERS/ EID):

- DEFAULT
- PRO_ADMINUSER_OID
- PRO_APPDEV_OID

.

SAMPLE OF ONE - ABP DBA Requests ABPDBA-9993 (06/01/2018) - ORACLE DATABASE- CTPROD.AIGFPC.COM (3 of 4)



EnvironmentTyp	Databa	USERNAME	EID	UserLa	UserFir	ACCOUNT_STATUS	GRANT	OwnerName	OwnerEID
ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
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ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
ORACLE DB	CTPRO			NULL	NULL	Oracle Nati			4350209
ORACLE DB	CTPROD	AUTOCHECK	SYSTEM	NULL	NULL	Oracle Native User: OPEN	RO_PU_GI	Bachani, Deepak	4350209
ORACLE DB	CTPROD	AUTOSYS	SYSTEM	NULL	NULL	Oracle Native User: OPEN	RO_GCM_	Bachani, Deepak	4350209
ORACLE DB	CTPROD	AUTOSYS	SYSTEM	NULL	NULL	Oracle Native User: OPEN	CONNECT	Bachani, Deepak	4350209
ORACLE DB	CTPROD	AUTOSYS	SYSTEM	NULL	NULL	Oracle Native User: OPEN	OSCAR_UI	Bachani, Deepak	4350209
ORACLE DB	CTPROD	BATCH_USER	SYSTEM	NULL	NULL	Oracle Native User: OPEN	ENOTEBO	Bachani, Deepak	4350209
ORACLE DB	CTPROD	BATCH_USER	SYSTEM	NULL	NULL	Oracle Native User: OPEN	CONNECT	Bachani, Deepak	4350209
ORACLE DB	CTPROD	BATCH_USER	SYSTEM	NULL	NULL	Oracle Native User: OPEN	BATCH_US	Bachani, Deepak	4350209
ORACLE DB	CTPROD	BATCH_USER	SYSTEM	NULL	NULL	Oracle Native User: OPEN	RO_GCM_	Bachani, Deepak	4350209
ORACLE DB	CTPROD	BATCH_USER	SYSTEM	NULL	NULL	Oracle Native User: OPEN	RW_GCM_	Bachani, Deepak	4350209
ORACLE DB	CTPROD	BATCH_USER	SYSTEM	NULL	NULL	Oracle Native User: OPEN	RO_PU_GI	Bachani, Deepak	4350209
ORACLE DB	CTPROD	BETX	SYSTEM	NULL	NULL	Oracle Native User: OPEN	CONNECT	Bachani, Deepak	4350209
ORACLE DB	CTPROD	BETX	SYSTEM	NULL	NULL	Oracle Native User: OPEN	RESOURCE	Bachani, Deepak	4350209
ORACLE DB	CTPROD	BETX	SYSTEM	NULL	NULL	Oracle Native User: OPEN	RO_GCM_	Bachani, Deepak	4350209
ORACLE DB	CTPROD	BETX	SYSTEM	NULL	NULL	Oracle Native User: OPEN	RO_PU_GI	Bachani, Deepak	4350209
ORACLE DB	CTPROD	CDO_RMBS	SYSTEM	NULL	NULL	Oracle Native User: OPEN	RO_GCM_	Bachani, Deepak	4350209

FCU identified Non-Physical accounts (system/ services accounts as below:

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ORACLE PROFILE FOR NON- PHYSICAL ACCOUNTS (SYSTEM/ SERVICES ACCOUNTS) and according with Access Recertification RCMS Recert Extract Data owned by Deepak Bachani, Head of Global Capital Markets/IT & Ajay Jain, Manager Database Administration:

.

- APP_USERS
- MONITORING_PROFILE
- OBJECT_OWNER
- PRO_POWERDEV_OID
- PRO_ADMIN_USER
- PRO_APP_SERVICE
- SONIC_USER_PROF

SAMPLE OF ONE - ABP DBA Requests ABPDBA-9993 (06/01/2018) - ORACLE DATABASE- CTPROD.AIGFPC.COM (3 of 4)

.

CONCLUSION: ORACLE PASSWORD CONFIGURATION SETTING IN COMPLIANCE AIG SETTING REQUIRIMENTS:

.

As per above, FCU corroborate ONLY NON-SHYSICAL ACCOUNTS (System / Services Accounts) present system limitations preventing compliance with AIG settings. However, no relevant exception are noted, as per IT Policies & Supporting Standards- Policy Document: AIG AUTHENTICATION AND CREDENTIALS MANAGEMENT STANDARD, Issued: 05/12/2017. Pg. 4, emphasize" Where technically possible, technology components supplied by vendors and manufacturers must be able to accommodate AIG password requirements".

8. DB Profile in: CTPROD.AIGFPC.COM

Profile	Resource_name	Limit
APP_USERS	FAILED_LOGIN_ATTEMPTS	5
APP_USERS	PASSWORD_GRACE_TIME	UNLIMITED
APP_USERS	PASSWORD_LIFE_TIME	UNLIMITED
APP_USERS	PASSWORD_REUSE_MAX	13
APP_USERS	PASSWORD_VERIFY_FUNCTION	VERIFY_FUNCTION_AIG
DEFAULT	FAILED_LOGIN_ATTEMPTS	5
DEFAULT	PASSWORD_GRACE_TIME	10
DEFAULT	PASSWORD_LIFE_TIME	80
DEFAULT	PASSWORD_REUSE_MAX	13
DEFAULT	PASSWORD_VERIFY_FUNCTION	VERIFY_FUNCTION_AIG
MONITORING_PROFILE	FAILED_LOGIN_ATTEMPTS	5
MONITORING_PROFILE	PASSWORD_GRACE_TIME	UNLIMITED
MONITORING_PROFILE	PASSWORD_LIFE_TIME	UNLIMITED
MONITORING_PROFILE	PASSWORD_REUSE_MAX	13
MONITORING_PROFILE	PASSWORD_VERIFY_FUNCTION	VERIFY_FUNCTION_AIG
OBJECT_OWNER	FAILED_LOGIN_ATTEMPTS	5
OBJECT_OWNER	PASSWORD_GRACE_TIME	UNLIMITED
OBJECT_OWNER	PASSWORD_LIFE_TIME	UNLIMITED
OBJECT_OWNER	PASSWORD_REUSE_MAX	13
OBJECT_OWNER	PASSWORD_VERIFY_FUNCTION	VERIFY_FUNCTION_AIG
PRO_ADMINUSER_OID	FAILED_LOGIN_ATTEMPTS	5
PRO_ADMINUSER_OID	PASSWORD_GRACE_TIME	OID/OIM Policy
PRO_ADMINUSER_OID	PASSWORD_LIFE_TIME	OID/OIM Policy

:: PASSWORD_VERIFY_FUNCTION For CTPROD.AIGFPC.COM::

LINE	TEXT
1	FUNCTION VERIFY_FUNCTION (username VARCHAR2,
1	FUNCTION VERIFY_FUNCTION_AIG (username VARCHAR2,
2	password VARCHAR2,
3	old_password VARCHAR2)
4	RETURN BOOLEAN
5	IS
6	n BOOLEAN;
7	m INTEGER;
8	differ INTEGER;
9	isdigit BOOLEAN;
10	ischar BOOLEAN;
11	ispunct BOOLEAN;
12	db_name VARCHAR2 (40);
13	digitarray VARCHAR2 (20);
14	punctarray VARCHAR2 (25);
15	chararray VARCHAR2 (52);
16	i_char VARCHAR2 (10);
17	simple_password VARCHAR2 (10);
18	reverse_user VARCHAR2 (32);
19	isnumberic BOOLEAN;
20	BEGIN
21	digitarray := '0123456789';
22	chararray :=

PRO_ADMINUSER_OID	PASSWORD_REUSE_MAX	OID/OIM Policy
PRO_ADMINUSER_OID	PASSWORD_VERIFY_FUNCTION	OID/OIM Policy
PRO_ADMIN_USER	FAILED_LOGIN_ATTEMPTS	5
PRO_ADMIN_USER	PASSWORD_GRACE_TIME	10
PRO_ADMIN_USER	PASSWORD_LIFE_TIME	80
PRO_ADMIN_USER	PASSWORD_REUSE_MAX	13
PRO_ADMIN_USER	PASSWORD_VERIFY_FUNCTION	VERIFY_FUNCTION_AIG
PRO_APPDEV_OID	FAILED_LOGIN_ATTEMPTS	5
PRO_APPDEV_OID	PASSWORD_GRACE_TIME	OID/OIM Policy
PRO_APPDEV_OID	PASSWORD_LIFE_TIME	OID/OIM Policy
PRO_APPDEV_OID	PASSWORD_REUSE_MAX	OID/OIM Policy
PRO_APPDEV_OID	PASSWORD_VERIFY_FUNCTION	OID/OIM Policy
PRO_APP_SERVICE	FAILED_LOGIN_ATTEMPTS	5
PRO_APP_SERVICE	PASSWORD_GRACE_TIME	UNLIMITED
PRO_APP_SERVICE	PASSWORD_LIFE_TIME	UNLIMITED
PRO_APP_SERVICE	PASSWORD_REUSE_MAX	13
PRO_APP_SERVICE	PASSWORD_VERIFY_FUNCTION	VERIFY_FUNCTION_AIG
PRO_POWERDEV_OID	FAILED_LOGIN_ATTEMPTS	5
PRO_POWERDEV_OID	PASSWORD_GRACE_TIME	OID/OIM Policy
PRO_POWERDEV_OID	PASSWORD_LIFE_TIME	OID/OIM Policy
PRO_POWERDEV_OID	PASSWORD_REUSE_MAX	OID/OIM Policy
PRO_POWERDEV_OID	PASSWORD_VERIFY_FUNCTION	OID/OIM Policy
SONIC_USER_PROF	FAILED_LOGIN_ATTEMPTS	DEFAULT
SONIC_USER_PROF	PASSWORD_GRACE_TIME	DEFAULT
SONIC_USER_PROF	PASSWORD_LIFE_TIME	DEFAULT
SONIC_USER_PROF	PASSWORD_REUSE_MAX	DEFAULT
SONIC_USER_PROF	PASSWORD_VERIFY_FUNCTION	DEFAULT

```
'abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ';
punctarray := '!"#$%&()``*+,-/:;<=>?_';

-- Check for the minimum length of the password
IF LENGTH (password) < 8
THEN
raise_application_error (-20001, 'Password length less than 8');
END IF;

-- Check if the password is same as the username or username(1-100)
IF NLS_LOWER (password) = NLS_LOWER (username)
THEN
raise_application_error (-20002, 'Password same as or similar to user');
END IF;

FOR i IN 1 .. 100
LOOP
i_char := TO_CHAR (i);

IF NLS_LOWER (username) || i_char = NLS_LOWER (password)
THEN
raise_application_error (
-20005,
'Password same as or similar to user name ');
END IF;
END LOOP;

-- Check if the password is same as the username reversed

FOR i IN REVERSE 1 .. LENGTH (username)
LOOP
reverse_user := reverse_user || SUBSTR (username, i, 1);
END LOOP;

IF NLS_LOWER (password) = NLS_LOWER (reverse_user)
THEN
raise_application_error (-20003, 'Password same as username reversed');
```

60	END IF;
61	
62	-- Check if the password is too simple. A dictionary of words may be
63	-- maintained and a check may be made so as not to allow the words
64	-- that are too simple for the password.
65	IF NLS_LOWER (password) IN
66	('welcome1',
67	'database1',
68	'account1',
69	'user1234',
70	'password1',
71	'oracle123',
72	'computer1',
73	'abcdefg1',
74	'change_on_install')
75	THEN
76	raise_application_error (-20006, 'Password too simple');
77	END IF;
78	
79	-- Check if the password contains at least one letter, one digit and one
80	-- punctuation mark.
81	-- 1. Check for the digit
82	isdigit := FALSE;
83	m := LENGTH (password);
84	
85	FOR i IN 1 .. 10
86	LOOP
87	FOR j IN 1 .. m
88	LOOP
89	IF SUBSTR (password, j, 1) = SUBSTR (digitarray, i, 1)
90	THEN
91	isdigit := TRUE;
92	GOTO findchar;
93	END IF;
94	END LOOP;
95	END LOOP;
96	
97	IF isdigit = FALSE

98	THEN
99	raise_application_error (
100	-20003,
101	'Password should contain at least one digit, one character and one punctuation');
102	END IF;
103	
104	-- 2. Check for the character
105	<>
106	ischar := FALSE;
107	
108	FOR i IN 1 .. LENGTH (chararray)
109	LOOP
110	FOR j IN 1 .. m
111	LOOP
112	IF SUBSTR (password, j, 1) = SUBSTR (chararray, i, 1)
113	THEN
114	ischar := TRUE;
115	GOTO findpunct;
116	END IF;
117	END LOOP;
118	END LOOP;
119	
120	IF ischar = FALSE
121	THEN
122	raise_application_error (
123	-20003,
124	'Password should contain at least one digit, one character and one punctuation');
125	END IF;
126	
127	-- 3. Check for the punctuation
128	<>
129	ispunct := FALSE;
130	
131	FOR i IN 1 .. LENGTH (punctarray)
132	LOOP
133	FOR j IN 1 .. m
134	LOOP

135	IF SUBSTR (password, j, 1) = SUBSTR (punctarray, i, 1)
136	THEN
137	ispunct := TRUE;
138	--GOTO endsearch;
139	GOTO FindNumberic;
140	END IF;
141	END LOOP;
142	END LOOP;
143	
144	IF ispunct = FALSE
145	THEN
146	raise_application_error (
147	-20003,
148	'Password should contain at least one digit, one character and one punctuation');
149	END IF;
150	
151	
152	<>
153	-- Check if the password first and last char are numberic or not
154	-- If not numberic then raise error
155	isnumberic := FALSE;
156	
157	IF (ASCII (SUBSTR (password, 1, 1)) > 47
158	AND ASCII (SUBSTR (password, 1, 1)) < 58)
159	OR (ASCII (SUBSTR (password, -1, 1)) > 47
160	AND ASCII (SUBSTR (password, -1, 1)) < 58)
161	THEN
162	isnumberic := TRUE;
163	ELSE
164	isnumberic := FALSE;
165	END IF;
166	
167	IF isnumberic = TRUE
168	THEN
169	raise_application_error (
170	-20003,
171	'First letter or last letter of the password cannot be numeric');
172	END IF;

173	
174	<>
175	-- Check if the password is the same as server name and or servername(1-100)
176	SELECT name INTO db_name FROM sys.v$database;
177	
178	IF NLS_LOWER (db_name) = NLS_LOWER (password)
179	THEN
180	raise_application_error (-20004,
181	'Password same as or similar to server name');
182	END IF;
183	
184	SELECT host_name INTO db_name FROM sys.v$instance;
185	
186	FOR i IN 1 .. 100
187	LOOP
188	i_char := TO_CHAR (i);
189	
190	IF NLS_LOWER (db_name) || i_char = NLS_LOWER (password)
191	THEN
192	raise_application_error (
193	-20004,
194	'Password same as or similar to server name');
195	END IF;
196	END LOOP;
197	
198	
199	-- Check if the password is the same as server name and or servername(1-100)
200	SELECT name INTO db_name FROM sys.v$database;
201	
202	IF NLS_LOWER (db_name) = NLS_LOWER (password)
203	THEN
204	raise_application_error (-20005,
205	'Password same as or similar to server name');
206	END IF;
207	
208	SELECT host_name INTO db_name FROM sys.v$instance;
209	
210	FOR i IN 1 .. 100

211	LOOP
212	i_char := TO_CHAR (i);
213	
214	IF NLS_LOWER (db_name) || i_char = NLS_LOWER (password)
215	THEN
216	raise_application_error (
217	-20005,
218	'Password same as or similar to server name ');
219	END IF;
220	END LOOP;
221	
222	
223	
224	-- Check if the password differs from the previous password by at least
225	-- 3 letters
226	IF old_password IS NOT NULL
227	THEN
228	differ := LENGTH (old_password) - LENGTH (password);
229	
230	IF ABS (differ) < 3
231	THEN
232	IF LENGTH (password) < LENGTH (old_password)
233	THEN
234	m := LENGTH (password);
235	ELSE
236	m := LENGTH (old_password);
237	END IF;
238	
239	differ := ABS (differ);
240	
241	FOR i IN 1 .. m
242	LOOP
243	IF SUBSTR (password, i, 1) != SUBSTR (old_password, i, 1)
244	THEN
245	differ := differ + 1;
246	END IF;
247	END LOOP;

248	
249	IF differ < 3
250	THEN
251	raise_application_error (
252	-20006,
253	'Password should differ by at least 3 characters');
254	END IF;
255	END IF;
256	END IF;
257	
258	-- Everything is fine; return TRUE ;
259	RETURN (TRUE);
260	END;

::OID/OIM POLICY::

min_alpha	min_number	min_specialchar	min_uppercase	min_lowercase	starts_with_char	disallow_userid	disallow_fname	disallow_lname	warn_after	expires_after	max_incorrect_login	enforce_history
2	1	1	1	1	1	1	1	1	80	90	5	13