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# Introduction

This plan serves as the primary guide and record for the installation of **Apache Tomcat and DCC Web Common Environment** on Linux systems and includes:

* The context for the system being installed.
* A high-level overview of the process.
* Detailed instructions to perform the installation.
* The approach to verify that the outcome of the installation.
* Annotations to confirm the successful completion of installation and verification steps (as required in the TIP).
* Evidence that is required to document the execution of the installation process which may include screen shots captured in this document or links/references to other documents produced during the installation.

When initially approved this Technical Installation Plan contains context, background and instructions only. Once executed it will be re-named with new ID and contain installation evidence and become a Technical Installation Record

## Definitions

The following terms could be used in this Technical Installation Plan:

Table 1 - Definitions

| Term | Definition |
| --- | --- |
| Application Layer | The layer that supports the use of the application. |
| Documentum CC or DCC | Documentum Competency Center, support and deployment of Documentum based systems. Part of R&D IT SDS |
| Content Server | Documentum terminology for the Repository server. |
| D2 | D2 is content management configuration layer from EMC. |
| DAR | Documentum Archive format. |
| Database Layer | The layer that stores the data of the application. |
| Development | The environment to be built for research and development. |
| Docbase | A Documentum database. |
| EIS | End User & Infrastructure Services |
| FTI | Full Text Indexing (see xPlore) |
| GDC | Global Data Centre (Upper Merion, USA) |
| HTTPS | Secure protocol for communications between client and web servers |
| ITCP | IT Continuity Plan |
| NAS | Network Attached Storage |
| PDF | Portable Document format. |
| Production | The environment to be deployed for use by the business. |
| Render | A process where the original format (i.e. Microsoft Word) is copied into a PDF format. |
| Repository | See docbase. |
| RHEL | Red Hat Enterprise Linux |
| SAN | Subject Alternative Name |
| SDS | System Delivery & Support, part of R&D IT |
| SSL | Secure Sockets Layer is the standard security technology for establishing an encrypted link between a web server and a client browser. This link ensures that all data passed between the web server and browsers remain private and integral. |
| SSV | EMC Submission Store & View Module |
| Test | The environment to be built for testing. |
| TIP | Technical Installation Plan. |
| UAT | User Acceptance Testing environment (see also Val) |
| Val | The environment to be built for Validation/User Acceptance testing. |
| WADS | <KSG> Web Application Development Standards |
| WAST | <KSG> Web Application Security Testing |
| xPlore | New generation full-text indexing and search engine for Documentum platform. |

# Context

Table 2 - Context

|  |  |
| --- | --- |
| **System ID** | ***P014556918*** |
| **System Name** | ***cdms d2 (prd)*** |
| **System Description** | ***CDMS LSQM Production Environment*** |
| **Relevant Technical Specifications** | N/A |
| **Technical Installation Plan** | INS\_0000061280 - Technical Installation Plan for Tomcat Web Environment |
| **TIR Approvers** | Please refer to CDMS Properties of this TIP for approver roles required for the TIR |
| **DCC Web Environment Version** | Recorded as ***<CE\_Version>*** |
| **Apache Tomcat Version** | Recorded as ***<Tomcat\_Version>*** |
| **Java Version** | Recorded as ***<Java\_Version>*** |

## Impact to Operations

Table 3 - Impact to Operations

|  |  |
| --- | --- |
| Required down time | 6 hours |
| Business Impact | There is no impact to operations since this TIP would normally only be implemented as part of a system build |
| Risks / Mitigations | No risk |

## System Components

The following table summarises the collection of system components that may be installed using this TIP:

Table 4 - System Components

| Component | Description |
| --- | --- |
| Apache Tomcat & DCC Web Common Environment | Tomcat and Web CE for Documentum Servers |
|  |  |

Note: The set of components actually installed during a particular execution will be identified in the Technical Installation Record (TIR).

## Final Environment

Not Applicable

## High-level Approach

The table below contains the overall sequence of actions required to complete the installation. Not all actions may be required for partial execution of this installation plan.

Table 5 - High-level Installation Steps

| # | Action | Comments |
| --- | --- | --- |
|  | Record Information | All the relevant parameter values to be recorded for specific install being conducted. |
|  | Pre-Installation Instructions | In this section the initialization of environment is done and Application Server is stopped |
|  | Installation Steps - Web Common Environment | Web Common environment set up |
|  | Installation Steps - Java | Java installation steps |
|  | Installation Steps - Tomcat | Tomcat installation steps |
|  | Installation Steps - Enable Secure Sockets Layer Support | Enable SSL in tomcat |
|  | Post-Installation Steps - WADS Compliance | To implement WADS compliance |
|  | Integrate into System Startup and Shutdown | Set up System Startup and Shutdown |

## TIP Use Instructions

The TIP may be executed hardcopy or electronically and should be used as follows;

Obtain a copy of the blank TIP (electronic / hardcopy as appropriate)

1. Assign new document Title and Assign new document ID
2. Gather information required for Table 9 - Installation Parameters from approved sources.
3. Delete or make as ‘not applicable’ the Approval page from the parent TIP
4. Update revision history to indicate this is version1 of Technical Installation Record
5. Follow the TIP preparation and execution instructions. Instruction cells that have been greyed out do not need to be completed.
6. If Typescript evidence is being captured, ensure that files are given a unique Document ID and stored in the same repository as the TIR and recorded in Appendix E
7. Once install has finished the installer must collate supporting evidence, record any anomaly / deviations in the required section and immediately sign the TIR (either wet signature or via electronic signature (installer only) at version 1). This is to create formal record of the execution at time of execution.
8. The TIR must then be reviewed and approved by the independent reviewer (and QRC if applicable), who should add any additional anomalies / deviations identified as appropriate and sign the TIR (for electronic documents this should be by versioning the document to version 2. Note that the installer does not have to approve the version 2 document).

# Installation Preparation

Table 6 - Preparation

|  |  |  |
| --- | --- | --- |
| **Name** | **Initials** | **Date** |
|  |  |  |

The following table identifies the relevant pre-requisites to installation and their completion;

Table 7 – Installation Pre-Requisites

| # | Pre-Requisite | Rationale | Verified? | Comment |
| --- | --- | --- | --- | --- |
| 1 | Change Control Reference | Required for all controlled environments. |  | ID |
| 2 | Complete Table 9 - Installation Parameters | Required before installation can commence |  | n/a |

System components to be installed during this installation execution:

Table 8 - Installed Components

| **Installed?** | **Component** | **Comment** |
| --- | --- | --- |
|  | Web Common Environment ***<CE\_Version>*** | Web Common Environment v2.1.7 |
|  | Apache Tomcat ***<Tomcat\_Version>*** | Apache Tomcat v8.5.15 |
|  | Java JDK ***<Java\_Version>*** | Java JDK v1.7.0\_79 |

## Installation Parameters

Prior to installation, the installer(s) will complete all the relevant parameter values as defined in Table 9 - Installation Parameters

Table 9 - Installation Parameters

| Step # | Description | Rationale | Parameter |
| --- | --- | --- | --- |
|  | Record the host details for the target system. IP address or full DNS Host name can be recorded. | All information is recorded | ***Target\_Host***  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | Fully qualified domain name of target host  e.g. uk2salxv0043.corpnet2.com | All information is recorded | ***Target\_Host\_FQDN***  **\_\_\_\_** **\_\_\_** |
|  | Record Installation Account details for the target system  e.g.  dmwebadm  dmwebadm | All information is recorded | ***Installation\_Account***  **\_\_\_\_\_\_\_** dmwebadm **\_\_\_\_\_\_\_\_\_\_\_** |
| ***Installation\_Group***  **\_\_\_\_\_\_** dmwebadm **\_\_\_\_\_\_\_\_\_\_** |
|  | Record the personal MUDID of the person performing the installation | All information is recorded | ***Personal\_MUDID***  **\_\_\_\_\_\_\_\_\_**pp693752**\_\_\_\_\_\_\_\_\_\_\_** |
|  | Record filesystem directory details of the home directory of the Installation account  e.g. /opt/dmwebadm | All information is recorded | ***Installation\_File\_System***  **\_\_\_\_\_\_\_**/opt/dmwebadm **\_\_\_\_\_\_\_** |
|  | Record the fully-qualified domain name of the server hosting the DCC distributions repository  e.g. uk1sxlx00043.corpnet2.com | All information is recorded | ***Distribution\_Repository***  **\_\_\_\_\_\_** **\_\_\_\_\_\_** |
|  | Record Web Common Environment version.  e.g. 2.1.7 | All information is recorded  **<*CE\_Version*>** is obtained from Table 2 - | **<*CE\_Version*>**  **\_\_\_\_\_\_\_**2.1.7**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  | Record whether to install a new Java version (YES/NO) | All information is recorded | ***Install\_Java***  **\_\_\_\_\_\_\_\_\_\_** Yes **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  | If ***<Install\_Java>*** is Yes, record the following parameters; otherwise mark as N/A.  Indicate the version of Java to be installed  e.g. 1.7.0\_80  Record the folder path on ***<Distribution\_Repository>*** to installation files.  e.g.  /dctm/dm001/dmadmin/tapes/java/7/1.7.0\_80  /dctm/dm001/dmadmin/tapes/java/8/1.8.0.92  Record the JDK installation file name.  e.g.  jdk-7u80-linux-x64.tar.gz  jdk-8u92-linux-x64.tar.gz | All information is recorded | ***Java\_Version***  **\_\_\_\_\_\_**1.7.0\_79**\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Java\_Install\_Path***  **\_\_\_**/dctm/dm001/dmadmin/tapes/java/7/1.7.0\_79 **\_\_** |
| ***Java\_Install\_File***  **\_\_\_\_** jdk-7u79-linux-x64.tar.gz **\_\_\_\_\_\_\_** |
|  | Record whether this is a first-time installation of Tomcat on this server (YES/NO) | All information is recorded | ***First\_Install***  **\_\_\_\_\_\_\_** Yes **\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  | Record the version number of Tomcat to be installed  e.g. 7.0.56, 8.0.14 | All information is recorded | ***Tomcat\_Version***  **\_\_\_\_\_\_\_**8.5.15**\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  | Record the name of the Tomcat instance to be created  Note: This should also include a number e.g. tomcat\_1.7.0.56 or the application name e.g. tomcat\_admintool\_7.0.5.3 | All information is recorded | ***Tomcat\_Instance***  **\_\_\_\_\_** tomcat\_cdmslsqm\_8.5.15**\_\_\_\_\_\_\_\_\_\_** |
|  | Record the name of the shell script environment file to hold the specific values for this environment  Note:Environment name can include a name e.g. .bashrc\_1 or the application name e.g. .bashrc\_admintool | All information is recorded | ***Env\_File***  **\_\_\_\_\_\_\_\_\_**.bashrc\_cdmslsqm**\_\_\_\_\_\_\_\_\_\_\_\_** |
|  | Record the number of threads to be reserved for this Tomcat instance  e.g. 75, 1000 | All information is recorded | ***Max\_Threads***  **\_\_\_\_\_\_\_\_\_\_\_**1000**\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Min\_Spare\_Threads***  **\_\_\_\_\_\_\_\_\_\_\_\_\_**75**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

| # | Pre-Requisite | Rationale | Comment |
| --- | --- | --- | --- |
|  | Record the port numbers to be used by this Tomcat Instance  Please refer to **Appendix C - Tomcat Ports**  e.g.  8005  8080  8443  8009  n/a | All information is recorded | ***Shutdown\_Port***  **\_\_\_\_\_**8005**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Non\_SSL\_Port***  **\_\_\_\_\_\_\_\_\_\_\_\_**8080**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Redirect\_Port***  **\_\_\_\_\_\_\_\_\_\_\_**8443**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Coyote\_Port***  **\_\_\_\_\_\_\_\_\_\_\_**8009**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Proxy\_Port***  **\_\_\_\_\_\_\_\_\_\_\_** N/A **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  | Record the required daily backup schedule to be adopted for this Tomcat instance  Notes:  Days start with Sunday  Acceptable values are :  N - no backup H - hot backup (currently functionally the same as N) C - cold backup B - bounce (stop and immediately restart Tomcat)  e.g: BBBBBBB, NNNNNNN etc | All information is recorded | ***Backup\_Schedule***  **\_\_\_\_\_\_\_\_\_\_\_\_** BBBBBBB**\_\_\_\_\_\_\_** |
|  | Does this Apache Tomcat instances require WADS compliance? Yes/No | All information is recorded | ***WADS\_Compliance***  **\_\_\_\_\_\_\_\_\_\_\_** Yes **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  | Will a vanity URL be used to access this environment?  Enter “Yes” if ***<Vanity\_URL>*** will be used.  e.g. [http://gcms.<KSG>.com](http://gcms.gsk.com), [http://pier.<KSG>.com](http://pier.gsk.com)  Enter “No” if this environment’s URL will include the ***<Installation\_Host>*** host name. Set ***<Vanity\_URL>*** value to N/A  e.g. http://us2salx00031.corpnet2.com... | All information is recorded | ***Is\_Vanity\_URL***  **\_\_\_\_\_\_\_\_\_\_\_** Yes **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  ***Vanity\_URL***  ***\_\_\_\_\_\_\_*** https://cdms.<KSG>.com ***\_\_\_\_\_\_\_\_\_\_\_*** |
|  | Indicate if this Tomcat instance will use HTTPS/SSL. Enter “No” only if non-secured HTTP will be used.  e.g. Yes/No | All information is recorded | ***Is\_Secured***  **\_\_\_\_\_\_\_\_\_\_\_** Yes **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  | If ***<Is\_Secured>*** = “No”, mark the following parameters as “n/a” and skip to next step; otherwise enter two HTTP/SSL settings below.  Indicate (Yes/No) in **<*Is\_HTTPS/SSL\_Setup>*** if HTTP/SSL has been setup on this server in the past. Enter “No” if HTTP/SSL has never been setup.  e.g: **<*HTTPS/SSL\_Encryption>*** can be either of the following values:  1024, 2048, 3072, 4096  e.g: **<*Certificate\_Name>*** can be:  cdmsqmdev  Notes:   * Any change in encryption level should be tested - (e.g. performance) * Per [https://certificates.<KSG>.com](https://certificates.gsk.com): The default is 2048. Use of any encryption level above 2048 is at your own risk. DO NOT select a key length of 3072 or 4096 if you are using SSL to secure web services. * This encryption level affects which JDK versions can be used. | All information is recorded | ***Is\_HTTPS/SSL\_Setup***  **\_\_\_\_\_\_\_\_\_\_** No **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  ***HTTPS/SSL\_Encryption***  **\_\_\_\_\_\_\_\_\_\_**2048**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  ***Certificate\_Name***  **\_\_\_\_\_\_\_\_** cdmslsqmprd1**\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  | If ***<Is\_Secured>*** = “No”, mark the following parameters as “n/a” and skip to next step; otherwise enter two HTTP/SSL settings below.  Indicate (Yes/No) in ***<Copy\_HTTPS/SSL\_Keystore>*** if server certificate can be updated using an existing .keystore file. Enter “Yes” if all of the following conditions are met:  a.) **<*Is\_Vanity\_URL*>** = “Yes”  b.) .keystore file can be copied from an existing server to this environment. Source server will be captured in ***<Keystore\_Src\_Server>***.  If ***<Copy\_HTTPS/SSL\_Keystore>*** = “Yes”, enter source server name in ***<Keystore\_Src\_Server>***. This will be the server (e.g. first webserver) that the .keystore file is copied from.  If ***<Copy\_HTTPS/SSL\_Keystore>*** = “No”, mark ***<Keystore\_Src\_Server>*** as “n/a”.  e.g.  Yes  uk2salxv0043.corpnet2.com | All information is recorded | ***Copy\_HTTPS/SSL\_Keystore***  **\_\_\_\_\_\_\_\_\_\_\_\_** No **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Keystore\_Src\_Server***  \_\_\_\_\_\_\_\_ N/A \_\_\_\_\_\_\_\_ |
|  | Record Secondary or group email address.  e.g. oax63537@<KSG>.com | All information is recorded | ***Mail\_Address***  **\_\_\_\_\_\_\_\_\_\_\_\_** oax63537@<KSG>.com **\_\_\_\_\_\_\_** |
|  | Record if Install the CA certificate is required. If this was done before record “No”. (Note: This needs to be done only once per Content Server)  e.g.  Yes/No  Note: Here “Yes” mean install is required and this install was not done before in this CS | All information is recorded | ***Install\_CA\_Certificate\_In\_CS***  **\_\_\_\_\_\_\_\_** No **\_\_\_\_** |
|  | Record fully qualified domain name of the Content Server for this web application  e.g.  uk1salx00529.corpnet2.com | All information is recorded | ***Full\_CS\_Server\_Name***  **\_\_\_\_\_\_\_\_** us1sxlx00196.corpnet2.com **\_\_** |
|  | Record whether to install or upgrade the Web Common Environment  Permissible values are:   * NO - do not install or upgrade * INSTALL - make a first-time installation * UPGRADE - upgrade an existing environment | All information is recorded | ***Install\_CE***  **\_\_\_\_\_\_\_\_\_\_\_** INSTALL **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  | Record the type of environment on this host, and also a description. This info will be used to customize the shell prompt.  e.g.  Prd, Tst, Dev, Dev-Test, Val, ITCP, POC  Web Server #1 | All information is recorded | ***Shell\_Prompt\_Type***  **\_\_\_\_\_\_\_** Prd **\_\_\_\_\_\_\_\_\_\_\_**  ***Shell\_Prompt\_Desc***  **\_\_\_\_\_\_** CDMS Web Server#1**\_\_\_\_\_\_** |
|  | Record the values for minimum and maximum Java heap values and Permgen size  Note: If using JDK 8 or higher, options PermSize and MaxPermSize are obsolete. Mark as “N/A” if this is the case. | All information is recorded | ***Java\_Heap\_Size\_Min***  **\_\_\_\_\_\_\_\_**2048**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Java\_Heap\_Size\_Max***  **\_\_\_\_\_\_\_\_\_\_**4096**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Perm\_Size***  **\_\_\_\_\_\_\_\_\_\_\_**1024**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  | Record the path for source install files within ***<Distribution\_Repository>***. | All information is recorded | ***Tomcat\_Inst\_Path***  **\_\_\_\_\_**\_/dctm/dm001/dmadmin/tapes/apache/tomcat/8.5.15/\_\_**\_\_\_\_\_\_** |
|  | Record the Subject Alternative Names to be added in the certificate for this tomcat environment.  Mark as “NA” if no Subject Alternative Names is needed for this tomcat environment. | All information is recorded | ***Subject\_Alt\_Name***  **\_\_\_\_\_\_\_** us1sxlx00194.corpnet2.com **\_\_\_\_\_\_**  **\_\_\_\_\_\_\_\_** cdms.<KSG>.com **\_\_\_\_\_\_\_** |

# Installation Execution

Table 10 - Installers

|  |  |  |
| --- | --- | --- |
| **Name** | **Initials** | **Comment** |
|  |  |  |

Table 11 - Timeframe

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Date**  **<dd-mmm-yyyy>** | **Time (24hr)**  **<00:00>** | **Time Zone** | **Name** |
| **Installation Started** |  |  |  |  |
| **Installation Completed** |  |  |  |  |

## Pre-Installation Instructions

Prior to installation, the installer(s) will complete all the steps below. Please note that these steps shall be completed sufficiently in advance of the planned installation date so as to allow time to remedy any issues detected during the execution of this section.

 Table 12 - Pre-Installation Instructions

| Step # | Instructions | Expected Result | Actual Result | Pass/ Fail | Reference/ Comment |
| --- | --- | --- | --- | --- | --- |
|  | Login to the ***<Target\_Host>*** server, as the ***<Personal\_MUDID>*** account.  Take a screen print exhibit | Login successful. | Login successful. | Pass | Exhibit  **\_\_\_\_\_**01\_\_\_\_\_\_ |
|  | Initiate a typescript. Use the following command:  script -f <typescript\_name>  where <typescript\_name> is the name given by the installer to the logging file | The typescript file opens successfully  The name of the typescript is recorded  \_CRQ000000455162\_Tomcat\_D2\_Pri\_07Mar2018.txt\_\_  Capture a screenshot exhibit to record the time of starting the typescript in Appendix D | The typescript file opens successfully | Pass | Exhibit  **\_\_\_\_\_**02\_\_\_\_\_\_\_ |
|  | Login as ***<Installation\_Account>*** by issuing the following command:  super ***<Installation\_Account>***-shell  Enter your personal password when prompted. | Login successful. | Login successful. | Pass | Refer Appendix E Typescript Evidence |
|  | Check server memory  grep MemTotal /proc/meminfo | Command reports that at least 1GB memory is configured | Command reports that more than 1GB memory is configured | Pass | Refer Appendix E Typescript Evidence |
|  | Verify the home directory is the ***<Installation\_File\_System>*** account.  Use the following command:  echo $HOME | The home directory matches the ***<Installation\_File\_System>*** account. | The home directory matches the /opt/dmwebadm account. | Pass | Refer Appendix E Typescript Evidence |
|  | Check sufficient disk space exists for installation  *df -k /local/apps* | Command reports that at least 500MB space is free | Command reports that more than 500MB space is free | Pass | Refer Appendix E Typescript Evidence |
|  | Check sufficient disk space exists for log directories  df -k /dctm/dm0 | Command reports that at least 1GB space is free | Command reports that more than 1GB space is free | Pass | Refer Appendix E Typescript Evidence |
|  | Ensure directory /local/apps/documentum exists:  Use the following command:  ls -lad /local/apps/documentum  If necessary, submit a Remedy ticket requesting their creating and requesting owner and group to be set to ***<Installation\_Account>*** and ***<Installation\_Group>*** respectively | The directory trees specified exist with the required ownership  OR  A Remedy ticket is submitted requesting creation  Record ticket number:  \_\_\_\_\_\_\_\_\_\_\_\_\_NA\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | The directory trees specified exist with the required ownership | Pass | Refer Appendix E Typescript Evidence |
|  | Verify that at least 5 MB of free disk space is available on /var/tmp.  Use the following command:  df -k /var/tmp | At least 5 MBof free disk space is available on /var/tmp**.** | More than 5 MBof free disk space is available on /var/tmp**.** | Pass | Refer Appendix E Typescript Evidence |
|  | Verify the ***<Installation\_Account>*** account is a member of ***<Installation\_Group>*** group  Use the following command:  id -a | The ***<Installation\_Account>*** account is reported as a member of ***<Installation\_Group>*** group. | The dmwebadm account is reported as a member of dmwebadm group. | Pass | Refer Appendix E Typescript Evidence |
|  | Ensure that the SHELL variable is reported as /bin/bash using the following command:  echo $SHELL | The shell is reported as /bin/bash. | The shell is reported as /bin/bash. | Pass | Refer Appendix E Typescript Evidence |
|  | Exit from the ***<Installation\_Account>***-shell using:  exit | Successful exit from the shell account | Successful exit from the shell account | Pass | Refer Appendix E Typescript Evidence |
|  | Type exit to close the script | Typescript successfully exited | Typescript successfully exited | Pass | Refer Appendix E Typescript Evidence |
|  | Logout from the target system | The user is logged out | The user is logged out | Pass | NA |

## Installation Steps - Web Common Environment

During the Execution, the installer(s) will complete all the steps below:

Table 13 Installation Steps - Web Common Environment

| Step # | Instructions | Expected Result | Actual Result | Pass/ Fail | Reference/ Comment |
| --- | --- | --- | --- | --- | --- |
|  | Login to the ***<Target\_Host>*** server, as the ***<Personal\_MUDID>*** account.  Take a screen print exhibit | Login successful. | Login successful. | Pass | Exhibit  **\_\_\_03\_\_\_\_\_\_\_** |
|  | Open a typescript logging session  script -f <typescript\_name>  where <typescript\_name> is a suitable Linux filename | File of name <typescript\_name> is created.  The name of the typescript is recorded:  \_\_CRQ000000455162\_Tomcat\_D2\_Pri\_07Mar2018\_01\_\_\_\_\_\_  Capture a screenshot exhibit to record the time of starting the typescript in Appendix D | The typescript file opens successfully | Pass | Exhibit  **\_\_\_04\_\_\_\_\_\_\_** |
|  | Logon to the Target system using the ***<Installation\_Account>*** account.  super ***<Installation\_Account>***-shell  Note: There is a hyphen between ***<Installation\_Account>*** and ‘shell’ | Logon to the Target system using the ***<Installation\_Account>*** account was successful | Login successful. | Pass | Refer Appendix E Typescript Evidence |
|  | Ensure that directory /dctm/dm0/***<Installation\_Account>*** exists  Use the following commands:  ls -lad /dctm/dm0/***<Installation\_Account>***  If the directory does not exist create it using the command:  mkdir -p /dctm/dm0/***<Installation\_Account>***  Verify success using the following command:  ls -lad /dctm/dm0/***<Installation\_Account>*** | The directory /dctm/dm0/***<Installation\_Account>*** exists with the required ownership | The directory /dctm/dm0/dmwebadm exists with the required ownership | Pass | Refer Appendix E Typescript Evidence |
|  | Ensure directory /local/apps/documentum/server/dmg\_scripts exists, creating any directories as necessary.  Use the following command:  ls -lad /local/apps/documentum/server/dmg\_scripts  If it does not exist then create it using the following command:  mkdir -p /local/apps/documentum/server/dmg\_scripts  and then verify success with the following command:  ls -lad /local/apps/documentum/server/dmg\_scripts | The directory /local/apps/documentum/server/dmg\_scripts exists with the required ownership | The directory /local/apps/documentum/server/dmg\_scripts exists with the required ownership | Pass | Refer Appendix E Typescript Evidence |
|  | If ***<Install\_CE>*** is NO skip to step 4.2.9 and mark steps 4.2.6 to 4.2.8 as “n/a”. |  |  |  |  |
|  | If ***<Install\_CE>*** is UPGRADE then backup the existing Web Common Environment files from /opt/***<Installation\_Account>*** to /dctm/dm0/***<Installation\_Account>***/ce\_backup.  Else, mark this step as “n/a”.  Use the following commands:  mkdir /dctm/dm0/***<Installation\_Account>***/ce\_backup  cd  cp .bash\_profile .bashrc\_\* /dctm/dm0/***<Installation\_Account>***/ce\_backup  cp -r /local/apps/documentum/server/dmg\_scripts /dctm/dm0/***<Installation\_Account>***/ce\_backup  Verify success using the command:  ls -la /dctm/dm0/***<Installation\_Account>***/ce\_backup | Files are present in /dctm/dm0/***<Installation\_Account>***/ce\_backup | NA | NA | NA |
|  | Copy the files listed below from ***<Distribution\_Repository>:/***dctm/dm001/dmadmin/tapes/<KSG>/websystem/***<CE\_Version>*** to the current directory.  Use the following command:  sftp ***<Personal\_MUDID>***@***<Distribution\_Repository>***  cd /dctm/dm001/dmadmin/tapes/<KSG>/websystem/***<CE\_Version>***  get .bash\_profile get bashrc\_x\_template get clean\_logs.sh get dmwebserver get init\_web get reset.sh get web\_authority\_file get web\_include\_vars  exit  Verify success using the following command:  ls -la | The specified files exist in the current directory | The specified files exist in the current directory | Pass | Refer Appendix E Typescript Evidence |
|  | Using a suitable text editor, edit file .bash\_profile to enable color-coding for this host’s shell prompt.   1. Locate line commencing “DM\_HOST\_ENV\_TYPE=”.   Set the value to ***<Shell\_Prompt\_Type>***   1. Locate line commencing “DM\_HOST\_ENV\_DESC=”.   Set the value to ***<Shell\_Prompt\_Desc>***   1. Locate 2 lines commencing “PS1=”. Verify that the 1st line is not commented (does not begin with #) and the 2nd line is commented (begins with #).   PS1="\e[$DM\_HOST\_HOST\_COLOR`uname -n`($DM\_HOST\_ENV\_TYPE)\e[m [\!]% "  #PS1=`uname -n`" % "  Save changes. Verify by: cat .bash\_profile  Note: There is a “.” character at the beginning of the filename | The correctly edited file is listed | The correctly edited file is listed | Pass | Refer Appendix E Typescript Evidence |
|  | If ***<Tomcat\_Instance>*** is specified, create a new environment initialisation file otherwise skip this step marking it “n/a”  Use the following commands:  mv bashrc\_x\_template ***<Env\_File>***  Using a suitable text editor edit the following variables in file ***<Env\_File>***   * JAVA\_VERSION=***<Java\_Version>*** * TOMCAT\_VERSION=***<Tomcat\_Instance>***   Save the edits and exit the editor  Verify success using the following command:  cat ***<Env\_File>*** | The file is edited as specified | The file is edited as specified | Pass | Refer Appendix E Typescript Evidence |
|  | If ***<Install\_CE>*** is UPGRADE then ensure all existing .bashrc\_\* files contain a definition of CATALINA\_PID variable.  Use the following process:  Using a suitable text editor edit each .bashrc\_\* file in turn   * Locate line commencing CATALINA\_TMPDIR= * If next line does not start CATALINA\_PID= then insert the following line: CATALINA\_PID=${CATALINA\_TMPDIR}/tomcat.pid ; export CATALINA\_PID   Save the edits and exit the editor  Verify success using the following command:  cat .bashrc\_\* (each file) | All existing .bashrc\_\* files edited as specified. | NA | NA | NA |
|  | Initialize the environment  Use the following commands:  source .bash\_profile  source ***<Env\_File>***  Verify success using the following commands:  echo $JAVA\_VERSION  echo $TOMCAT\_VERSION | The scripts executes without error  The value of the variables listed corresponds to the values entered in step 4.2.9 | The scripts executes without error  The value of the variables listed corresponds to the values entered in step 4.2.9 | Pass | Refer Appendix E Typescript Evidence |

## Installation Steps – Java

During the Execution, the installer(s) will complete all the steps below:

Table 14 - Installation Steps - Java

| Step # | Instructions | Expected Result | Actual Result | Pass/ Fail | Reference/ Comment |
| --- | --- | --- | --- | --- | --- |
|  | If ***<Install\_Java>*** is “NO” then skip to section 4.4 |  |  |  |  |
|  | If not already logged in, complete this step; otherwise skip to step 4.3.5, marking step 4.3.4 and 4.3.4as “n/a”.  Login to the ***<Target\_Host>*** application server, as the ***<Personal\_MUDID>*** account. | Login successful.  Take a screen print exhibit | NA | NA | Exhibit  \_\_\_\_NA\_\_\_\_\_\_ |
|  | Open a typescript logging session  script -f <typescript\_name>  where <typescript\_name> is a suitable Linux filename  NOTE: This step assumes that the installer is logged in on a suitable Linux host to enable typescript recording to take place | File of name <typescript\_name> is created.  The name of the typescript is recorded:  \_\_\_\_\_\_\_\_\_NA\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Capture a screenshot exhibit to record the time of starting the typescript in Appendix D | NA | NA | Exhibit  \_\_\_\_NA\_\_\_\_\_\_ |
|  | Login as ***<Installation\_Account>*** by issuing the following command:  super ***<Installation\_Account>***-shell  Enter your personal password when prompted. | Login successful | NA | NA | NA |
|  | Create directory /local/apps/documentum/jdk  Use the following command:  mkdir -p /local/apps/documentum/jdk  Verify success using the following command:  ls -lad /local/apps/documentum/jdk | The directory /local/apps/documentum/jdk exists | The directory /local/apps/documentum/jdk exists | Pass | Refer Appendix E Typescript Evidence |
|  | Change directory to /local/apps/documentum/jdk  Use the following command:  cd /local/apps/documentum/jdk | The current directory is as specified in the instruction | The current directory is as specified in the instruction | Pass | Refer Appendix E Typescript Evidence |
|  | Copy the ***<Java\_Install\_File>*** from ***<Distribution\_Repository>:/<Java\_Install\_Path>*** to the current directory.  Use the following command:  sftp ***<Personal\_MUDID>***@***<Distribution\_Repository>***  cd ***<Java\_Install\_Path>***  get ***<Java\_Install\_File>*** exit  Verify success using the following command:  ls -la | File ***<Java\_Install\_File>*** exists in the current directory | jdk-7u79-linux-x64.tar.gz exists in the current directory | Pass | Refer Appendix E Typescript Evidence |
|  | For the following steps 4.3.9 thru 4.3.11, complete only one step depending on the file extension (.bin, .tar or .tar.gz) of ***<Java\_Install\_File>***. Skip the other two steps, marking as N/A. |  |  |  |  |
|  | If ***<Java\_Install\_File>*** is of type **“.bin”**, complete the following commands; otherwise mark as N/A.  Ensure the transferred file is executable using the following command:  chmod ug+x jdk\*  Verify success using the following command:  ls -la  Run script. Use the following command:  ./***<Java\_Install\_File>***  Respond “yes” to “Do you agree to the above license terms”  Verify by: ls -la | The file is marked executable.  The script runs without error.  Java installation complete. | NA | NA | NA |
|  | If ***<Java\_Install\_File>*** is of type **“.tar”**, complete the following commands; otherwise mark as N/A.  tar -xvf ***<Java\_Install\_File>***  Verify by: ls -la | Java installation files extracted. | NA | NA | NA |
|  | If ***<Java\_Install\_File>*** is of type **“.tar.gz”**, complete the following commands; otherwise mark as N/A.  Extract directory  tar xvfz ***<Java\_Install\_File>***  Verify by: ls -la | Java installation files extracted. | Java installation files extracted. | Pass | Refer Appendix E Typescript Evidence |
|  | Delete original Java installation file.  Use the following command: rm -f ***<Java\_Install\_File>***  Verify success using the following command: ls -la ***<Java\_Install\_File>*** | The specified file no longer exists | The specified file no longer exists | Pass | Refer Appendix E Typescript Evidence |
|  | Verify the correct java is accessible:  Use the following command:  java -version | The first line of the output reads as follows:  java version “***<Java\_Version>***” | The first line of the output reads as follows:  java version 1.7.0\_79 | Pass | Refer Appendix E Typescript Evidence |

## Installation Steps - Tomcat

During the Execution, the installer(s) will complete all the steps below:

Table 15 - Installation Steps - Tomcat

| Step # | Instructions | Expected Result | Actual Result | Pass/ Fail | Reference/ Comment |
| --- | --- | --- | --- | --- | --- |
|  | If ***<Tomcat\_Instance>*** is not specified skip to Section 4.5 |  |  |  |  |
|  | If not already logged in, complete this step; otherwise skip to step 4.4.5, marking step 4.4.3 and 4.4.4 as “n/a”.  Login to the ***<Target\_Host>*** application server, as the ***<Personal\_MUDID>*** account. | Login successful.  Take a screen print exhibit | NA | NA | Exhibit  \_\_\_\_NA\_\_\_\_\_\_ |
|  | Open a typescript logging session  script -f <typescript\_name>  where <typescript\_name> is a suitable Linux filename  NOTE: This step assumes that the installer is logged in on a suitable Linux host to enable typescript recording to take place | File of name <typescript\_name> is created.  The name of the typescript is recorded:  \_\_\_\_\_\_\_\_NA\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Capture a screenshot exhibit to record the time of starting the typescript in Appendix D | NA | NA | Exhibit  \_\_\_\_NA\_\_\_\_\_\_ |
|  | Login as ***<Installation\_Account>*** by issuing the following command:  super ***<Installation\_Account>***-shell  Enter your personal password when prompted. | Login successful | NA | NA | NA |
|  | Ensure current directory is /local/apps/documentum  Use the following command:  cd /local/apps/documentum  Verify success using the following command:  pwd | The current directory is /local/apps/documentum | The current directory is /local/apps/documentum | Pass | Refer Appendix E Typescript Evidence |
|  | Ensure the correct environment is current  Use the following command:  source /opt/***<Installation\_Account>***/***<Env\_File>*** | The environment script runs without error | The environment script runs without error | Pass | Refer Appendix E Typescript Evidence |
|  | Ensure directory tomcat exists  Use the following command:  ls -lad /local/apps/documentum/tomcat  if the directory does not exist  then create it by using the following command:  mkdir tomcat  Verify success using the following command:  ls -lad /local/apps/documentum/tomcat | Directory /local/apps/documentum/tomcat exists | Directory /local/apps/documentum/tomcat exists | Pass | Refer Appendix E Typescript Evidence |
|  | Navigate to /local/apps/documentum/tomcat  Use the following command:  cd /local/apps/documentum/tomcat  Obtain the Tomcat distribution  Use the following command  sftp ***<Personal\_MUDID>***@***<Distribution\_Repository>***  cd ***<Tomcat\_Inst\_Path>***  get apache-tomcat-***<Tomcat\_Version>***.tar.gz  exit  NOTE: The tar files in this distribution use GNU tar extensions, and must be unpacked with a GNU compatible version of tar. The standard Red Hat Linux version is suitable | File apache-tomcat-***<Tomcat\_Version>***.tar.gz exists in the current directory | File apache-tomcat-8.5.15. tar.gz exists in the current directory | Pass | Refer Appendix E Typescript Evidence |
|  | Create the tomcat instance tree  Use the following commands:  tar xvzf apache-tomcat-***<Tomcat\_Version>***.tar.gz  Execute the following to rename directory  mv apache-tomcat-***<Tomcat\_Version> <Tomcat\_Instance>*** | Directory ***<Tomcat\_Instance>*** exists in the current directory | Directory tomcat\_cdmslsqm\_8.5.15 exists in the current directory | Pass | Refer Appendix E Typescript Evidence |
|  | Delete the distribution file  Use the following command:  rm -f apache-tomcat-***<Tomcat\_Version>***.tar.gz  Verify success using the following command:  ls -la apache-tomcat-***<Tomcat\_Version>***.tar.gz | The specified distribution file is deleted | The specified distribution file is deleted | Pass | Refer Appendix E Typescript Evidence |
|  | Using a suitable text editor, edit file /local/apps/documentum/tomcat/***<Tomcat\_Instance>***/conf/server.xml according to this step 4.4.11 and 4.4.12.   1. Locate line <Server port=”8005” shutdown=”SHUTDOWN”>   Ensure this port value is set to ***<Shutdown\_Port>***   1. Locate line commencing   <Executor name=”tomcatThreadPool”...  Uncomment this section.  Ensure maxThreads is set to ***<Max\_Threads>*** and minSpareThreads is set to ***<Min\_Spare\_Threads>***.   1. Locate line similar to commencing <Connector port=”8080” protocol=”HTTP/1.1”…   Comment out this section.  Save edits (e.g. :w in vi editor). Continue edits in next step. | server.xml contents are edited as specified | server.xml contents are edited as specified | Pass | Refer Appendix E Typescript Evidence |
|  | Using a suitable text editor, continue edits to /local/apps/documentum/tomcat/***<Tomcat\_Instance>***/conf/server.xml below:   1. Locate line commencing <Connector executor="tomcatThreadPool" …   Uncomment this section.  Ensure port is set to ***<Non\_SSL\_Port>*** and redirectPort is set to ***<Redirect\_Port>***.   1. Locate line similar to commencing <Connector port="8009" protocol="AJP/1.3"   Ensure port is set to ***<Coyote\_Port>***   1. Ensure all occurrences of redirectPort are set to ***<Redirect\_Port>***   Save edits and exit  Verify by: cat /local/apps/documentum/tomcat/***<Tomcat\_Instance>***/conf/server.xml | Additional server.xml contents are edited as specified | Additional server.xml contents are edited as specified | Pass | Refer Appendix E Typescript Evidence |
|  | Create directory /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>***/logs  Use the following commands:  mkdir -p /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>***/logs  Verify success using the following command:  ls -lad /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>***/logs | The specified directories exist | The specified directories exist | Pass | Refer Appendix E Typescript Evidence |
|  | Create directory /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>***/temp  Use the following command:  mkdir -p /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>***/temp  Verify success using the following command:  ls -lad /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>***/temp | The specified directories exist | The specified directories exist | Pass | Refer Appendix E Typescript Evidence |
|  | Change to directory $CATALINA\_HOME  Use the following command:  cd $CATALINA\_HOME  Verify success using the following command:  pwd | The current directory is as specified | The current directory is as specified | Pass | Refer Appendix E Typescript Evidence |
|  | Replace directory logs with link to logging disk  Use the following commands:  /bin/rm -fR logs  ln -s /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>***/logs  Verify success using the following commands:  ls -la logs | The specified valid link exists | The specified valid link exists | Pass | Refer Appendix E Typescript Evidence |
|  | Replace directory temp with link to logging disk  Use the following commands:  /bin/rm -fR temp  ln -s /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>***/temp  Verify success using the following commands:  ls -la temp | The specified valid link exists | The specified valid link exists | Pass | Refer Appendix E Typescript Evidence |
|  | Change the permissions of the following path to allow read+execute privileges to all:  Use the following commands:  chmod a+rx /dctm/dm0 /dctm/dm0/***<Installation\_Account>*** /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>*** /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>***/logs  Verify success by checking permission of each directory along this path, ensuring each directory has the minimum permissions of drwxr-xr-x  ls -lad /dctm/dm0 /dctm/dm0/***<Installation\_Account>*** /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>*** /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>***/logs | Each directory along /dctm/dm0/dmwebadm/tomcat/***<Tomcat\_Instance>***/logs path have read+execute privileges. | Each directory along /dctm/dm0/dmwebadm/tomcat/tomcat\_cdmslsqm\_8.5.15/logs path have read+execute privileges. | Pass | Refer Appendix E Typescript Evidence |
|  | Change the ACL of path to logs directory to allow read access to all users.  Use the following commands:  cd /dctm/dm0/***<Installation\_Account>***/tomcat/***<Tomcat\_Instance>***  getfacl logs  setfacl -Rd -m o::rx logs  Verify success by:  getfacl logs | ACL modified for logs path. | ACL modified for logs path. | Pass | Refer Appendix E Typescript Evidence |
|  | Using a suitable text editor, edit file $CATALINA\_HOME/bin/catalina.sh  Locate line commencing JAVA\_OPTS=...   * Add Java heap size. Ensure parameters -Xms is set to ***<Java\_Heap\_Size\_Min>*** and -Xmx is set to ***<Java\_Heap\_Size\_Max>*** * Add Permgen setting. Ensure parameters -XX is set to MaxPermSize=***<Perm\_Size>*** * Ensure –server is added to the line   Save any edits and exit the editor  If JAVA\_OPTS line is not available, create one using the example below.  e.g. JAVA\_OPTS="-server -XX:MaxPermSize=1024m -Xms2048m -Xmx2048m ${JAVA\_OPTS}"  Verify success using the following command:  cat $CATALINA\_HOME/bin/catalina.sh | The file is edited as specified | The file is edited as specified | Pass | Refer Appendix E Typescript Evidence |
|  | Change to the $CATALINA\_HOME/webapps directory.  Use the following command:  cd $CATALINA\_HOME/webapps  Remove the following directories.  rm -fr manager/ host-manager/ docs/ examples/  Verify success using the following command:  ls -lad manager/ host-manager/ docs/ examples/ | Default Tomcat application directories are removed | Default Tomcat application directories are removed | Pass | Refer Appendix E Typescript Evidence |
|  | If ***<Tomcat\_Version>*** is 7.x, complete the next steps 4.4.23 and 4.4.24 to prevent Java security warnings (i.e. warnings about signed and unsigned code);  Otherwise mark these 2 steps as “n/a” and skip to next section. |  | NA | NA | NA |
|  | Using the appropriate editor, edit $CATALINA\_HOME/conf/ context.xml  Replace the following text:  <Context>  With:  <Context useHttpOnly="false">  Save changes.  Verify success by using command:  cat $CATALINA\_HOME/conf/context.xml | context.xml edited as directed. | NA | NA | NA |
|  | Using the appropriate editor, edit $CATALINA\_HOME/conf/ catalina.properties  Add the following text:  org.apache.jasper.compiler.Parser.STRICT\_WHITESPACE=false  Save changes.  Verify success by using command:  cat $CATALINA\_HOME/conf/catalina.properties | catalina.properties edited as directed. | NA | NA | NA |
|  | Start-up the web server  Use the following command:  $CATALINA\_HOME/bin/startup.sh  Verify the start-up of web server in the log file by using the following command:  tail -f $CATALINA\_HOME/logs/catalina.out  Verify success by accessing the following URL from a desktop browser  http://***<Installation\_Host\_FQDN>***:***<Non\_SSL\_Port>*** | A screen as detailed In **Appendix B** **- Web Server Default Screen** is returned  Take a screen print exhibit | A screen as detailed In **Appendix B** **- Web Server Default Screen** is returned | Pass | Exhibit:  \_\_\_05\_\_\_\_\_\_\_\_\_ |
|  | Shutdown the web server  Use the following command:  $CATALINA\_HOME/bin/shutdown.sh  Verify success by accessing the following URL from a desktop browser  http://***<Installation\_Host\_FQDN>***:***<Non\_SSL\_Port>***  Take a screen print exhibit | The browser displays error indicating the web server is down (e.g. “Page Could Not Be Displayed”, “Page Not Found”) | The browser displays error indicating the web server is down (e.g. “Page Could Not Be Displayed”, “Page Not Found”) | Pass | Exhibit  \_\_\_\_\_\_06\_\_\_\_\_ |

## Installation Steps - Enable Secure Sockets Layer Support

During the Execution, the installer(s) will complete all the steps below:

Table 16 - Installation Steps - Enable Secure Sockets Layer Support

| Step # | Instructions | Expected Result | Actual Result | Pass/ Fail | Reference/ Comment |
| --- | --- | --- | --- | --- | --- |
|  | If **<*Is\_Secured*>** is “Yes”, continue to step 4.5.2 ; otherwise go to Section 4.6. |  |  |  |  |
|  | If **<*Is\_HTTPS/SSL\_Setup>*** is “Yes”, skip to step 4.5.11, marking 4.5.6 thru 4.5.10 as “n/a”.  If **<*Is\_HTTPS/SSL\_Setup>*** is “No”, continue to next step. |  |  |  |  |
|  | If not already logged in, complete this step; otherwise skip to step 4.5.6 marking step 4.5.4 and 4.5.5 as “n/a”.  Login to the ***<Target\_Host>*** application server, as the ***<Personal\_MUDID>*** account. | Login successful.  Take a screen print exhibit | NA | NA | Exhibit  \_\_\_\_\_NA\_\_\_\_\_\_ |
|  | Open a typescript logging session  script -f <typescript\_name>  where <typescript\_name> is a suitable Linux filename  NOTE: This step assumes that the installer is logged in on a suitable Linux host to enable typescript recording to take place | File of name <typescript\_name> is created.  The name of the typescript is recorded:  \_\_\_\_\_\_\_\_\_NA\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Capture a screenshot exhibit to record the time of starting the typescript in Appendix D | NA | NA | Exhibit  \_\_\_\_\_NA\_\_\_\_\_\_ |
|  | Login as ***<Installation\_Account>*** by issuing the following command:  super ***<Installation\_Account>***-shell  Enter your personal password when prompted. | Login successful | NA | NA | NA |
|  | Initialize the environment  Use the following commands:  source $HOME/.bash\_profile  source $HOME/***<Env\_File>***  Verify success using the following commands:  echo $JAVA\_VERSION  echo $TOMCAT\_VERSION | The scripts executes without error  The value of the variables listed corresponds to the values entered in step 4.2.9 | The scripts executes without error  The value of the variables listed corresponds to the values entered in step 4.2.9 | Pass | Refer Appendix E Typescript Evidence |
|  | Change to the tmp directory  cd /tmp  Fetch the CA certificate by executing the following command.  wget --no-check-certificate [https://certificates.<KSG>.com/roots/ca.***<HTTPS/SSL\_Encryption***>.crt](https://certificates.gsk.com/roots/ca.%3cHTTPS/SSL_Encryption%3e.crt) | The CA certificate is successfully fetched. | The CA certificate is successfully fetched. | Pass | Refer Appendix E Typescript Evidence |
|  | Make the JRE security database writeable  Use the following command:  chmod u+w,a+r $JAVA\_HOME/jre/lib/security/cacerts | chmod command is successful | chmod command is successful | Pass | Refer Appendix E Typescript Evidence |
|  | Install the CA certificate in the JRE security database  Use the following command:  $JAVA\_HOME/bin/keytool -import -keystore $JAVA\_HOME/jre/lib/security/cacerts -file ca.***<HTTPS/SSL\_Encryption>***.crt -alias root -storepass changeit  Trust this certificate? [no]:  yes | Installation succeeds without error | Installation succeeds without error | Pass | Refer Appendix E Typescript Evidence |
|  | Make the JRE security database read-only  Use the following command:  chmod a+r $JAVA\_HOME/jre/lib/security/cacerts | chmod command is successful | chmod command is successful | Pass | Refer Appendix E Typescript Evidence |
|  | Make backup copies of $CATALINA\_HOME/conf/server.xml prior to changing Tomcat configuration in steps below.  Execute the following command:  cp $CATALINA\_HOME/conf/server.xml $CATALINA\_HOME/conf/server.xml.backup  Verify success by issuing this command  ls -la $CATALINA\_HOME/conf/server.xml\* | XML files are backed up successfully. | XML files are backed up successfully. | Pass | Refer Appendix E Typescript Evidence |
|  | Using a suitable text editor, edit file $CATALINA\_HOME/conf/server.xml, making the following changes:   1. Uncomment (enable) the Connector element for the HTTPS (SSL HTTP/1.1) port 2. Ensure the port attribute is set to ***<Redirect\_Port>*** 3. Add the following: server=" " 4. Ensure keystoreFile attribute is set to “conf/.keystore” 5. Add the following sslEnabledProtocols="TLSv1.2"   Example:  <!-- Define a SSL/TLS HTTP/1.1 Connector on port 8443 -->  <Connector port="8443" protocol="org.apache.coyote.http11.Http11NioProtocol" maxThreads="150" SSLEnabled="true" scheme="https" secure="true" clientAuth="false" sslProtocol="TLS" server=" " keystoreFile="conf/.keystore" sslEnabledProtocols="TLSv1.2" />  Save your changes. Verify by:  cat $CATALINA\_HOME/conf/server.xml | server.xml updated as specified. | server.xml updated as specified. | Pass | Refer Appendix E Typescript Evidence |
|  | Update the catalaina.sh file to ensure the Tomcat application server is updated to TLS 1.2 protocol  Using a suitable editor, edit the catalina.sh file  vi $CATALINA\_HOME/bin/catalina.sh  Include the following statement:  JAVA\_OPTS="-Djdk.tls.client.protocols=TLSv1.2 -Dsun.security.ssl.allowUnsafeRenegotiation=false -Dhttps.protocols=TLSv1.2"  Save the changes made in this file. | catalina.sh file is updated successfully | catalina.sh file is updated successfully | Pass | Refer Appendix E Typescript Evidence |
|  | If ***<Copy\_HTTPS/SSL\_Keystore>*** = “Yes”, skip to step 4.5.22 and mark 4.5.13 - 4.5.21 as “n/a”.  If ***<Copy\_HTTPS/SSL\_Keystore>*** = “No”, continue with next step. |  |  |  |  |
|  | Generate Keystore by executing the following command:  If ***<Subject\_Alt\_Name>*** is NA  $JAVA\_HOME/bin/keytool -genkey -alias tomcat -keyalg RSA -validity 3650 -keystore $CATALINA\_HOME/conf/.keystore  If ***<Subject\_Alt\_Name>*** is not NA, replace the value of <SAN> with each values of ***<Subject\_Alt\_Name>*** from step no 3.1.29  $JAVA\_HOME/bin/keytool -genkey -alias tomcat -keyalg RSA -validity 3650 -ext san=dns:<SAN1>,dns:<SAN2> -keystore $CATALINA\_HOME/conf/.keystore  Answer prompts according to the following:   1. Enter keystore password: changeit 2. What is your first and last name?  * If ***<Is\_Vanity\_URL>*** = “Yes”, then this value should be the vanity URL (e.g. testgcms.<KSG>.com) * If ***<Is\_Vanity\_URL>*** = “No”, then this value should be: ***<Installation\_Host\_FQDN>***  1. What is the name of your organizational unit? RDIT 2. What is the name of your organization? GlaxoSmithKline 3. What is the name of your City or Locality? Philadelphia 4. What is the name of your State or Province?   Pennsylvania   1. What is the two-letter country code for this unit? US 2. Review output. yes   Note: In case of errors, enter “no” to restart input sequence.   1. Enter key password for <tomcat> (RETURN if same as keystore password) Press RETURN | Keystore details complete as stated and without error. | Keystore details complete as stated and without error. | Pass | Refer Appendix E Typescript Evidence |
|  | Generate a certificate request using keytool  Execute the following command:  If ***<Subject\_Alt\_Name>*** is NA  keytool -certreq -alias tomcat -file $CATALINA\_HOME/conf/request.csr -keystore $CATALINA\_HOME/conf/.keystore  If ***<Subject\_Alt\_Name>*** is not NA, replace the value of <SAN> with each values of ***<Subject\_Alt\_Name>*** from step no 3.1.29  keytool -certreq -alias tomcat -file $CATALINA\_HOME/conf/request.csr -ext san=dns:<SAN1>,dns:<SAN2> -keystore $CATALINA\_HOME/conf/.keystore  Enter keystore password:  changeit | request.csr file generated | request.csr file generated | Pass | Refer Appendix E Typescript Evidence |
|  | View the request, and copy it (including the BEGIN and END lines) for use while obtaining the certificate.  Use the following command:  cat $CATALINA\_HOME/conf/request.csr | Copy is successful | Copy is successful | Pass | Refer Appendix E Typescript Evidence |
|  | Backup $CATALINA\_HOME/conf/.keystore to /documentum/common subdirectory. This subdirectory will vary for each application.    Here is an example for GCMS:  mkdir -p /documentum/common/GCMS/keystore/***<Installation\_Host>***\_***<DATE>***/  cp $CATALINA\_HOME/conf/.keystore /documentum/common/GCMS/keystore/***<Installation\_Host>***\_***<DATE>***/  ls -la /documentum/common/GCMS/keystore/***<Installation\_Host>***\_***<DATE>***/.keystore | Keystore file backed up to /documentum/common subdirectory | Keystore file backed up to /documentum/common subdirectory | Pass | Refer Appendix E Typescript Evidence |
|  | Obtain certificate:  Go to [https://certificates.<KSG>.com](https://certificates.gsk.com) (use Internet Explorer; site will not work with FireFox) and log in using your MUD ID and password.  Take a screen print exhibit | Login is successful | Login is successful | Pass | Exhibit  \_\_\_\_\_07\_\_\_\_\_\_\_\_ |
|  | Complete the SSL Certificate Generation Form using the information below:   1. CSR data [paste contents of $CATALINA\_HOME/conf/request.csr] 2. Pandora ID or Name:  * If ***<Is\_Vanity\_URL>*** = “Yes”, this value should point to the application component (e.g. GCMS Test). * If ***<Is\_Vanity\_URL>*** = “No”, then this value should be: ***<Installation\_Host>*** (e.g. us2salx00031) * After entering appropriate text, click search icon, select item, and then click OK.  1. Contact e-mail: [leave as defaulted] 2. Secondary or group email: ***<Mail\_Address>*** 3. Years: 5 4. Encryption: ***<HTTPS/SSL\_Encryption>***-bit 5. Name: ***<Certificate\_Name>*** 6. Comments: [optional description of the environment] 7. Is this a SAN/UCC Certificate? - “No” if ***<Subject\_Alt\_Name>*** is NA, else mark “Yes”.   Take a screen print exhibit | SSL Certificate Generation Form filling is completed | SSL Certificate Generation Form filling is completed | Pass | Exhibit  \_\_\_\_\_\_08\_\_\_\_\_\_\_ |
|  | Generate the certificate by clicking the “**Generate Certificate**” button. The screen will display your progress, and then show you a link to display the generated certificate. Note that if the link does not display after 1 minute, the generation has failed; you will need to:   1. Go to “My Certificates” to delete any partially generated certificate, then 2. Go to “Generate Certificates” and re-submit the SSL Certificate Generation Form.   If certificate failed, you can also try repeating steps 4.5.18 - 4.5.20. Occasionally, the second try works.  Take a screen print exhibit | Certificate file obtained | Certificate file obtained | Pass | Exhibit  \_\_\_\_\_\_09\_\_\_\_\_\_\_ |
|  | Move the certificate to the file $CATALINA\_HOME/conf/***<Certificate\_Name>***- ***<HTTPS/SSL\_Encryption>***.crt  (e.g. $CATALINA\_HOME/conf/GCMS-Test-1024.crt).  This can be performed in a couple of ways:   1. Create the file $CATALINA\_HOME/conf/***<Certificate\_Name>***-***<HTTPS/SSL\_Encryption>***.crt using vi or other editor, and copy the certificate contents (displayed in your browser) into it. 2. Download the certificate zip file; unpack it, then ftp/sftp the file to the appropriate location.Email the certificate zip file to yourself; unpack it, then ftp/sftp the file to the appropriate location. | Move the certificate to the file to the specified location is successful | Move the certificate to the file to the specified location is successful | Pass | Refer Appendix E Typescript Evidence |
|  | Install the certificate using keytool  Execute the following command:  $JAVA\_HOME/bin/keytool -import -trustcacerts -alias tomcat -file $CATALINA\_HOME/conf/***<Certificate\_Name>***-***<HTTPS/SSL\_Encryption>***.crt -keystore $CATALINA\_HOME/conf/.keystore -storepass changeit  Note: Pay attention to the dash “-“ after **<*Certificate\_Name*>**. | Certificate installed without error | Certificate installed without error | Pass | Refer Appendix E Typescript Evidence |
|  | If ***<Copy\_HTTPS/SSL\_Keystore>*** = “No”, skip this step; otherwise continue.  Record N/A in Pass/Fail column if this step is not executed.  Copy the .keystore file from ***<Keystore\_Src\_Server>*** server to $CATALINA\_HOME/conf using sftp or similar tool.  Execute the following command:  cd $CATALINA\_HOME/conf  sftp ***<MUD ID>***@***<Keystore\_Src\_Server>***:***<$CATALINA\_HOME value on Keystore\_Src\_Server>***/conf/.keystore  Verify success by issuing this command:  ls –la .keystore | .keystore file copied. | NA | NA | NA |
|  | If **<*Install\_CA\_Certificate\_In\_CS*>** is “Yes” continue; otherwise go to the next Section 4.6.  Note: These steps only need to be completed once per Content Server.  Connect to Content Server **<*Full\_CS\_Server\_Name*>**.  Log in with your MUD ID and password, then access the dmadmin account, and load the appropriate environment (e.g. use\_72). | Login is successful. | NA | NA | NA |
|  | Change to a tmp directory by using the following command: cd /tmp  Fetch the CA certificate by executing the following command:  wget --no-check-certificate [https://certificates.<KSG>.com/roots/ca.***<HTTPS/SSL\_Encryption>***.crt](https://certificates.gsk.com/roots/ca.%3cHTTPS/SSL_Encryption%3e.crt) | Install CA certificate successful. | NA | NA | NA |
|  | Make the JRE security database writable by executing the following command:  chmod a+r,u+w $JAVA\_HOME/jre/lib/security/cacerts | Script executed successfully. | NA | NA | NA |
|  | Install the CA certificate in the JRE security database by executing following command:  $JAVA\_HOME/bin/keytool -import -keystore $JAVA\_HOME/jre/lib/security/cacerts -file ca.***<HTTPS/SSL\_Encryption>***.crt -alias root -storepass changeit  Trust this certificate? [no]:  yes | Script executed successfully. | NA | NA | NA |
|  | Make the JRE security database read-only by executing the following command:  chmod a+r $JAVA\_HOME/jre/lib/security/cacerts | Script executed successfully. | NA | NA | NA |

## Post-Installation Steps - WADS Compliance

After the installation, the installer(s) will complete all the steps below:

Table 17 - Post-Installation Steps - WADS Compliance

| Step # | Instructions | Expected Result | Actual Result | Pass/ Fail | Reference/ Comment |
| --- | --- | --- | --- | --- | --- |
|  | If **<*WADS\_Compliance*>** is “Yes”, continue to next step; otherwise go to next section. |  |  |  |  |
|  | If not already logged in, complete this step; otherwise skip to step 4.6.5 marking step 4.6.3 and 4.6.4 as “n/a”.  Login to the ***<Target\_Host>*** application server, as the ***<Personal\_MUDID>*** account. | Login successful.  Take a screen print exhibit | NA | NA | Exhibit  \_\_\_\_\_NA\_\_\_\_\_ |
|  | Open a typescript logging session  script -f <typescript\_name>  where <typescript\_name> is a suitable Linux filename  NOTE: This step assumes that the installer is logged in on a suitable Linux host to enable typescript recording to take place | File of name <typescript\_name> is created.  The name of the typescript is recorded:  \_\_\_\_\_\_\_\_\_NA\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Capture a screenshot exhibit to record the time of starting the typescript in Appendix D | NA | NA | Exhibit  \_\_\_\_\_NA\_\_\_\_ |
|  | Login as ***<Installation\_Account>*** by issuing the following command:  super ***<Installation\_Account>***-shell  Enter your personal password when prompted. | Login successful | NA | NA | NA |
|  | Add directory $CATALINA\_HOME/lib/org/apache/catalina/util  Using the following command:  mkdir -p $CATALINA\_HOME/lib/org/apache/catalina/util  Verify success by using following command:  ls -lad $CATALINA\_HOME/lib/org/apache/catalina/util | Directory successfully added. | Directory successfully added. | Pass | Refer Appendix E Typescript Evidence |
|  | Using a suitable text editor, create new file $CATALINA\_HOME/lib/org/apache/catalina/util/ServerInfo.properties, add the following text.    server.info=  server.number=  server.built=  Verify by use the following command:  cat $CATALINA\_HOME/lib/org/apache/catalina/util/ServerInfo.properties  Note: All three values are left blank. | File ServerInfo.properties created as specified. | File ServerInfo.properties created as specified. | Pass | Refer Appendix E Typescript Evidence |
|  | Remove Apache Tomcat favicon.ico file from $CATALINA\_HOME/webapps/ROOT  Use the following commands:  cd $CATALINA\_HOME/webapps/ROOT  rm -f favicon.ico  Verify by using the following command:  ls -al $CATALINA\_HOME/webapps/ROOT/favicon.ico | Default Apache Tomcat icon removed successfully. | Default Apache Tomcat icon removed successfully. | Pass | Refer Appendix E Typescript Evidence |
|  | Using a suitable text editor, edit file $CATALINA\_HOME/conf/web.xml, making the following changes to add reference to custom error pages   * Locate last “</web-app>” line near end of file * Before this line, append the following lines:   <!-- Custom error pages to replace default error pages.  Part of WADS remediation -->  <error-page>  <error-code>404</error-code>  <location>/errorhandler-notfound.jsp</location>  </error-page>  <error-page>  <error-code>500</error-code>  <location>/errorhandler-servererror.jsp</location>  </error-page>  <!-- END of custom error page settings -->  Save changes.  Verify success by using command:  cat $CATALINA\_HOME/conf/web.xml | File web.xml is edited as specified | File web.xml is edited as specified | Pass | Refer Appendix E Typescript Evidence |
|  | Obtain the distribution files from the distribution repository and place at $CATALINA\_HOME/webapps/ROOT, using the following commands:  cd $CATALINA\_HOME/webapps/ROOT  sftp ***<Personal\_MUDID>***@***<Distribution\_Repository>***  cd ***<Tomcat\_Inst\_Path>***/../WADS  mget \*.jsp  exit  Verify success by executing the following command:  ls -l errorhandler-notfound.jsp  ls -l errorhandler-servererror.jsp | The existence of these 2 error pages underneath $CATALINA\_HOME/webapps/ROOT are verified | The existence of these 2 error pages underneath $CATALINA\_HOME/webapps/ROOT are verified | Pass | Refer Appendix E Typescript Evidence |
|  | Using a suitable text editor, edit each JSP file,  Replace “**<*ENTER REDIRECT URL HERE*>**” references with applicable application URL.  Replace “**<*ENTER APP NAME HERE*>**” references with your application name  Save changes. Verify success by using following command:  cat errorhandler-notfound.jsp  cat errorhandler-servererror.jsp | JSP files edited as specified  Specify URL entered in JSPs to replace ***<ENTER REDIRECT URL HERE>*** references  \_\_\_\_\_ https://cdms.<KSG>.com \_\_\_\_\_  Specify application name entered in JSPs to replace ***<ENTER APP NAME HERE>*** references  \_\_ CDMS LSQM Production Environment \_\_ | JSP files edited as specified | Pass | Refer Appendix E Typescript Evidence |
|  | If webserver is running, shut it down. Test if web server is running by using the following command:  ps -ef | grep ***<Tomcat\_Instance>*** | grep -v grep  Shutdown the web server using the following command:  $CATALINA\_HOME/bin/shutdown.sh  Verify success by accessing the following URL from a desktop browser  http://***<Installation\_Host\_FQDN>***:***<Non\_SSL\_Port>***  Take a screen print exhibit | The browser displays error indicating the web server is down (e.g. “Page Could Not Be Displayed”, “Page Not Found”) | The browser displays error indicating the web server is down (e.g. “Page Could Not Be Displayed”, “Page Not Found”) | Pass | Exhibit  \_\_\_\_\_10\_\_\_\_\_\_ |
|  | Start up the web server, using the following command:  $CATALINA\_HOME/bin/startup.sh  Verify success by accessing the following URL from a desktop browser  http://***<Installation\_Host\_FQDN>***:***<Non\_SSL\_Port>***  Take a screen print exhibit | A screen as detailed In **Appendix B- Web Server Default Screen** is returned | A screen as detailed In **Appendix B- Web Server Default Screen** is returned | Pass | Exhibit  \_\_\_\_\_11\_\_\_\_\_\_ |
|  | Verify success of WADS Compliance steps, by navigating to the following URL.  http://***<Installation\_Host\_FQDN>***:***<Non\_SSL\_Port>***/doesThisURLExist  If generic Tomcat 404 error is displayed (which includes Tomcat version), fix was NOT successful. If custom JSP page is shown, that redirects to URL entered in step 4.6.7, fix was successful.  Take a screen print exhibit | Custom JSP is shown indicating that an incorrect URL was entered. JSP redirects to working application URL. | Custom JSP is shown indicating that an incorrect URL was entered. JSP redirects to working application URL. | Pass | Exhibit  \_\_\_\_\_\_12\_\_\_\_\_ |

## Integrate into System Startup and Shutdown

During the Execution, the installer(s) will complete all the steps below:

Table 18 - Integrate into System Startup and Shutdown

| Step # | Instructions | Expected Result | Actual Result | Pass/ Fail | Reference/ Comment |
| --- | --- | --- | --- | --- | --- |
|  | If ***<Install\_CE>*** is NO skip to step 4.7.12 marking intervening steps as “n/a” |  |  |  |  |
|  | If not already logged in, complete this step; otherwise skip to step 4.7.5 marking step 4.7.3 and 4.7.4 as “n/a”.  Login to the ***<Target\_Host>*** application server, as the ***<Personal\_MUDID>*** account. | Login successful.  Take a screen print exhibit | NA | NA | Exhibit  \_\_\_\_\_NA\_\_\_\_ |
|  | Open a typescript logging session  script -f <typescript\_name>  where <typescript\_name> is a suitable Linux filename  NOTE: This step assumes that the installer is logged in on a suitable Linux host to enable typescript recording to take place | File of name <typescript\_name> is created.  The name of the typescript is recorded:  \_\_\_\_\_\_NA\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Capture a screenshot exhibit to record the time of starting the typescript in Appendix D | NA | NA | Exhibit  \_\_\_\_\_NA\_\_\_\_ |
|  | Login as ***<Installation\_Account>*** by issuing the following command:  super ***<Installation\_Account>***-shell  Enter your personal password when prompted. | Logon to the Target system using the ***<Installation\_Account>*** account was successful | NA | NA | NA |
|  | Change to the installation account home directory  Use the following command:  cd  Verify success using the following command:  pwd | The current directory is as specified | The current directory is as specified | Pass | Refer Appendix E Typescript Evidence |
|  | Move the following files to the dmg\_scripts directory   * clean\_logs.sh * init\_web * web\_include\_vars   Use the following command:  mv clean\_logs.sh init\_web web\_include\_vars /local/apps/documentum/server/dmg\_scripts  Verify success using the following command:  ls -la /local/apps/documentum/server/dmg\_scripts | The specified files exist in directory /local/apps/documentum/server/dmg\_scripts | The specified files exist in directory /local/apps/documentum/server/dmg\_scripts | Pass | Refer Appendix E Typescript Evidence |
|  | Change the permissions of the following path to allow read+execute privileges to all:  /local/apps/documentum/server/dmg\_scripts  Use the following command:  chmod a+rx /local/apps/documentum /local/apps/documentum/server /local/apps/documentum/server/dmg\_scripts  Verify success by checking permission of each directory along this path, ensuring each directory has the minimum permissions of drwxr-xr-x  ls -lad /local/apps/documentum /local/apps/documentum/server /local/apps/documentum/server/dmg\_scripts | Each directory along /local/apps/documentum/server/dmg\_scripts path have read+execute privileges for all | Each directory along /local/apps/documentum/server/dmg\_scripts path have read+execute privileges for all | Pass | Refer Appendix E Typescript Evidence |
|  | If ***<First\_Install>*** is YES move the file web\_authority\_file otherwise mark this step as “n/a”  Use the following commands to move file and set permissions:  mv web\_authority\_file /local/apps/documentum/server/dmg\_scripts  Verify success using the following command:  ls -la /local/apps/documentum/server/dmg\_scripts/web\_authority\_file | The specified files exist in directory /local/apps/documentum/server/dmg\_scripts | The specified files exist in directory /local/apps/documentum/server/dmg\_scripts | Pass | Refer Appendix E Typescript Evidence |
|  | Change to the dmg\_scripts directory  Use the following command:  cd /local/apps/documentum/server/dmg\_scripts | The current directory is as specified | The current directory is as specified | Pass | Refer Appendix E Typescript Evidence |
|  | Set the following files to be executable:   * init\_web * clean\_logs.sh   Use the following command:  chmod u+x init\_web clean\_logs.sh  Verify success using the following command:  ls -la init\_web clean\_logs.sh | The specified files are marked executable | The specified files are marked executable | Pass | Refer Appendix E Typescript Evidence |
|  | If ***<First\_Install>*** is YES then Raise a Remedy ticket to request the following:   * + Move file dmwebserver to /etc/init.d overwriting any file of this name which may already exist   + Set ownership on /etc/init.d/dmwebserver to root:root   + Set protection on /etc/init.d/dmwebserver to 744 * Request the following command to be run: chkconfig --add dmwebserver   See **Appendix A** for a template document. | The Remedy ticket is submitted  Record Remedy ticket number:  \_\_\_ USIM10015956266 \_\_\_\_\_\_ | The Remedy ticket is submitted. | Pass | Refer Appendix E Typescript Evidence |
|  | If ***<Tomcat\_Instance>***  is specified then edit entry for tomcat instance into file web\_authority\_file otherwise mark this step as “n/a”  Using a suitable text editor, edit file /local/apps/documentum/server/dmg\_scripts/web\_authority\_file to add a single line consisting of colon-delimited items in the order:  **<Installation\_Host> <Tomcat\_Instance> <Env\_File> <Java\_Version>** a null entry **<Backup\_Schedule>**  e.g us1sxlx00109:tomcat\_d2\_7.0.53:.bashrc\_d2:1.7.0\_79::NNNNNNN  Save edit and exit the editor  Verify success using the following command:  cat /local/apps/documentum/server/dmg\_scripts/web\_authority\_file | The file is edited as specified | The file is edited as specified | Pass | Refer Appendix E Typescript Evidence |
|  | If ***<First\_Install>*** is YES, then create a log directory in /dctm/dm0/<***Installation\_Account***>/log.  Use the following command:  mkdir -p /dctm/dm0/***<Installation\_Account>***/log  Change the permissions of the log directory by using the following command:  chmod u+x /dctm/dm0/***<Installation\_Account>***/log  Verify success using following command:  ls -lad /dctm/dm0/***<Installation\_Account>***/log | Log directory created successfully. | Log directory created successfully. | Pass | Refer Appendix E Typescript Evidence |
| 7 | If ***<First\_Install>*** is YES, then setup crontab to routinely restart Tomcat.  Using a suitable text editor, edit dmwebadm’s crontab file.  crontab -e    Add the following entries, replacing **<*MIN*>** and **<*HOUR*>** with appropriate restart times that are outside normal work hours:  # Scheduled tomcat restarts for application  #  **<*MIN*> <*HOUR*>** \* \* 1-5 ( . ${HOME}/.bash\_profile ; /local/apps/documentum/server/dmg\_scripts/init\_web -a stop -e backup ) > /dctm/dm0/***<Installation\_Account>***/log/tomcat\_server\_restart.log 2>&1  Save changes.  Verify success using the following command:  crontab -l | File contents are edited as specified  Specify 2-digit minute value entered in crontab to replace ***<MIN>*** reference  \_\_\_\_15\_\_\_\_\_\_\_  Specify 2-digit hour value entered in crontab to replace ***<HOUR>*** reference  \_\_\_\_\_23\_\_\_\_\_\_ | File contents are edited as specified | Pass | Refer Appendix E Typescript Evidence |
|  | Change to Home directory  Use the following command:  cd  Verify success using the command  pwd | Directory is the application owner’s home directory | Directory is the application owner’s home directory | Pass | Refer Appendix E Typescript Evidence |
|  | If any of the following files exist, delete them:  bashrc\_x\_template clean\_logs.sh init\_web web\_authority\_file web\_include\_vars  Use a command of the form:  /bin/rm -f <filename>  e.g. /bin/rm -f init\_web | Files successfully removed (if applicable) | Files successfully removed | Pass | Refer Appendix E Typescript Evidence |
|  | If ***<Install\_CE>*** is UPGRADE and backout is NOT going to occur then delete the temporary backup files  Use the following commands:  /bin/rm -fR /dctm/dm0/***<Installation\_Account>***/ce\_backup  Verify success with the command:  ls -la /dctm/dm0/***<Installation\_Account>***/ce\_backup | The directory /dctm/dm0/***<Installation\_Account>***/ce\_backup does not exsist | NA | NA | NA |
|  | If backout is NOT going to occur, verify success by accessing the following URL from a desktop browser  http://***<Installation\_Host>***.corpnet2.com:***<Non\_SSL\_Port>*** | A screen as detailed In **Appendix B- Web Server Default Screen** is returned | A screen as detailed In **Appendix B- Web Server Default Screen** is returned | Pass | Exhibit  \_\_\_\_\_13 \_\_\_\_ |
|  | If the following conditions are true, then submit a Remedy ticket requesting a Sitecope monitor to be added for this instance   * ***<Install\_CE>*** is INSTALL * backout is NOT going to occur * monitoring is desired | A Remedy ticket is submitted requesting Sitescope monitoring.  Record ticket number:  \_\_\_\_\_\_\_\_\_\_NA\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | NA | NA | NA |
|  | Exit from the ***<Installation\_Account>***-shell using:  exit | Logout successful | Logout successful | Pass | Refer Appendix E Typescript Evidence |
|  | Type exit to close the script | Script closed | Script closed | Pass | Refer Appendix E Typescript Evidence |
|  | Logout from the target system | The user is logged out | The user is logged out | Pass | NA |

## Back Out Plan

Should the above installation procedure fail, the installer(s) will need to complete all the steps below to return the system to its original configuration:

Table 19 - Back Out Plan

| Step # | Instructions | Expected Result | Actual Result | Pass/ Fail | Reference/ Comment |
| --- | --- | --- | --- | --- | --- |
|  | If not already logged in, complete this step; otherwise skip to step 4.8.5 marking step 4.8.3 and 4.8.4 as “n/a”.  Login to the ***<Target\_Host>*** application server, as the ***<Personal\_MUDID>*** account.  Take a screen print exhibit | Login successful. | NA | NA | Exhibit  \_\_\_\_\_NA\_\_\_\_ |
|  | Open a typescript logging session  script -f <typescript\_name>  where <typescript\_name> is a suitable Linux filename  NOTE: This step assumes that the installer is logged in on a suitable Linux host to enable typescript recording to take place | File of name <typescript\_name> is created.  The name of the typescript is recorded:  \_\_\_\_\_\_\_NA\_\_\_\_\_\_\_\_\_\_\_\_  Capture a screenshot exhibit to record the time of starting the typescript in Appendix D | NA | NA | Exhibit  \_\_\_\_\_\_NA\_\_\_ |
|  | Login as ***<Installation\_Account>*** by issuing the following command:  super ***<Installation\_Account>***-shell  Enter your personal password when prompted. | Logon to the Target system using the ***<Installation\_Account>*** account was successful | NA | NA | NA |
|  | Ensure Tomcat instance <***Tomcat\_Instance>*** is  shutdown.  Execute the following command:  $CATALINA\_HOME/bin/shutdown.sh | Catalina log shows the process is shutdown | NA | NA | NA |
|  | Remove the Tomcat instance entry inserted into  authority file by step 4.7.12 above using a suitable text  editor  Verify success by using the following command:  cat  /local/apps/documentum/server/dmg\_scripts/web\_authority\_file | File is edited correctly | NA | NA | NA |
|  | Delete the Tomcat directories  Use the following commands  /bin/rm -R  /local/app/documentum/tomcat/<***Tomcat\_Instance>***  /bin/rm -R  /dctm/dm0/***<Installation\_Account>***/tomcat/<***Tomcat\_Instance>***  Verify success with:  ls –lad /local/app/documentum/tomcat/<***Tomcat\_Instance>***  ls –lad  /dctm/dm0/***<Installation\_Account>***/tomcat/<***Tomcat\_Instance>*** | The specified directories no longer exist | NA | NA | NA |
|  | Delete environment file <***Env\_File>***  Use the following command:  /bin/rm -f ~/<***Env\_File>***  Verify success by using following command:  ls -la ~/<***Env\_File>*** | The specified directory no longer exists | NA | NA | NA |
|  | If <***Install\_Java>*** is YES then delete the following directory tree:  Use the following command:  /bin/rm -R  /local/app/documentum/jdk/jdk***<Java\_Version>***  Verify success using following command:  ls -lad  /local/app/documentum/jdk/jdk***<Java\_Version>*** | The specified directory no longer exists | NA | NA | NA |
|  | If <***First\_Install>*** is NO skip to step 4.8.13 marking  intervening steps as “n/a” |  |  |  |  |
|  | If ***<Install\_CE>*** is YES then delete the dmg\_scripts directory.  Use the following command:  /bin/rm -fR  /local/app/documentum/server/dmg\_scripts  Verify deletion using following command:  ls -la  /local/app/documentum/server/dmg\_scripts | The directory no longer exists | NA | NA | NA |
|  | If ***<Install\_CE>*** is UPGRADE then use the following commands:  cd /dctm/dm0/***<Installation\_Account>***/ce\_backup  /bin/mv .bash\_profile .bashrc\_\*  /opt/***<Installation\_Account>***  /bin/mv -r \*  /local/apps/documentum/server/dmg\_scripts  cd  /bin/rm -f /dctm/dm0/***<Installation\_Account>***/ce\_backup  Verify success using the command:  ls -la  /local/apps/documentum/server/dmg\_scripts | Original contents are restored | NA | NA | NA |
|  | Submit a Remedy Ticket to do the following  chkconfig --del dmwebserver  Delete file /etc/init.d/dmwebserver | Remedy ticket no.  \_\_\_\_\_\_\_NA\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | NA | NA | NA |
|  | Exit from the ***<Installation\_Account>***-shell using:  exit | Successful exit from the shell account | NA | NA | NA |
|  | Type exit to close the script | Typescript successfully exited | NA | NA | NA |
|  | Logout from the target system | The user is logged out | NA | NA | NA |

## Installation Verification

The installer(s) will complete all the steps to verify if the installation is successful.

Table 20 – Installation Verification

| Step # | Instructions | Expected Result | Actual Result | Pass/ Fail | Reference/ Comment |
| --- | --- | --- | --- | --- | --- |
|  | Verify success by accessing the following URL from a desktop browser  http://***<Target\_Host\_FQDN>***:***<Non\_SSL\_Port>***  Take a screen print exhibit. | Web page opened successfully  A screen like the one displayed in **Appendix B** **- Web Server Default Screen** should be returned. | Web page opened successfully  A screen like the one displayed in **Appendix B** **- Web Server Default Screen** should be returned. | Pass | Exhibit  \_\_\_\_14\_\_\_\_\_\_\_\_\_ |

## Execution Anomalies and Deviations

The table below contains any anomalies or deviations identified as part of the installation by the installer(s)

Table 21 - Anomalies and Deviations

| Step # | Description | Impact | Corrective and Preventative Action(s) | Reference |
| --- | --- | --- | --- | --- |
| NA | NA | NA | NA | NA |

## Execution Approval

.

|  |  |
| --- | --- |
| Name | Job Title and Role |
| The installer is signing to confirm that this document has been prepared in accordance with an approved document management process and that content is consistent with the process described in SOP-IT-0294 Perform Technical Installation.  The signatory has completed all entries in the document at time of signing. | |
| Installed by:  Priyanga Palani | Installer |

# Installation Review

## Reviewer Anomalies and Deviations

The table below contains any anomalies or deviations identified as part of the installation review by independent person(s)

Table 22 - Reviewer Anomalies and Deviations

| Step # | Description | Impact | Corrective and Preventative Action(s) | Reference |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |

## Conclusion

Table 23 - Conclusion

|  |  |
| --- | --- |
| **Installation Outcome** | This installation was successful  This installation failed |
| **Comments** |  |

## Review Approval

|  |  |
| --- | --- |
| Name | Job Title and Role |
| The Independent Technical Reviewer is signing to verify that they have checked that the installation was performed correctly and that all required evidence is present in this TIR and/or attached to the change record. In addition, this will indicate that that the documents have been checked for technical accuracy and completeness. | |
| Approved by:  Neil X Stewart | Independent Technical Reviewer |
| IT QRC are signing to confirm compliance with applicable IT policies, standards and procedures. | |
| Approved by:  Radha Krishna Hari | IT QRC |

# References

Table 24 - References

| No. | Identifier | Title |
| --- | --- | --- |
|  | INS\_0381706 | CDMS Document Management Plan for the Documentum CC |
|  | STD\_0110872 | Service Design Package for the Documentum CC |

# Revision History

Table 25 - Revision History

| Date | Version | Author | Reason For Revision | Template Version Used |
| --- | --- | --- | --- | --- |
| 12-Dec-08 | 1.0 | David Carrier | Initial version. | N/A |
| 29-May-09 | 2.0 | David Carrier | Improve clarity of instructions; Add web server verification steps | N/A |
| 30-Sep-09 | 3.0 | Gina Jillett | Update Section 2 - Scope and Step 6.6.4 to reflect new version of Tomcat (changed from 6.0.16 to 6.0.18). | N/A |
| 3-Dec-09 | 4.0 | Gina Jillett | No changes made to TIP steps.  Update Scope section and References section to accurately reflect purpose of this TIP is aimed at the GCMS environment. Update the Installation Anomalies section to match other TIPs and to ensure the incident management process, outside of project time, is referenced. | N/A |
| 18-Jun-10 | 5.0 | Gina Jillett | Changes made by Dan Bularzik for WADS remediation as analysed under change control CL631775. | N/A |
| 30-Aug-10 | 6.0 | Said Boke | Remove corrupt cross reference which was being inserted at Table 9 when referring to the heading section.  Update this Revision History table as the version order had not been updated properly - version 1.1 should have been version 2.0.  Updated Configuration Item Name/ID in Section 2. There should not be CUSTOM.tar. Should have been “Tomcat” and “Common Environment”.  Removed Secure Tomcat section. This section will be in WebTop TIP, since virtual directory is not available when installing tomcat, e.g. workgroup.  Added new Section 6.7 to Enable Secure Sockets Layer Support. | N/A |
| 6-Oct-11 | 7.0 | David Carrier | Updated all sections to reflect that this TIP belongs to the CM Hosting service and is a generic TIP that can be used for multiple services. Updated all informational sections to refer and mandate training in the new TIP Execution Guidance Document and to update recent CM Hosting documentation references.  No major changes to TIP installation steps. | N/A |
| 21-Feb-12 | 8.0 | David Carrier | Add instructions to permit upgrade of Web Common Environment | N/A |
| 30-May-12 | 9.0 | Kirstin Womble Thomas | Added WADS remediation steps | N/A |
| 10-Sep-12 | 10.0 | Kirstin Womble Thomas | Corrected typos and standardized commands. Updated Web Common Environment version. Added Acceptance tests for WADS Compliance steps. Changed SSL configuration to use shared pool. Removed default Tomcat apps. Added crontab restart. Added steps for Solaris implementation. Added permgen setting. Added Sitescope monitor request. | N/A |
| 7-Dec-12 | 11.0 | David Carrier | Update mandated Web Common Environment to 2.1.3;  Amend instructions for integration into Linux startup/shutdown  Add instruction to update existing .bashrc\_\* files  Update backout steps | N/A |
| 4-Sep-14 | 12.0 | Kirstin Womble Thomas | Added WADS remediation steps for masking Tomcat 400 error. Corrected typo. Created CE\_Version & Keystore\_Src\_Serverparams. Changed step 6.3.3 to check Linux memory using /proc/meminfo instead of /var/log/dmesg | N/A |
| 23-Sep-14 | 13.0 | Kirstin Womble Thomas | Updated versions in Section 2  Added 6.2.19 - 6.2.20  Modified 6.2.21 - 6.2.22, adding new params for SSL  Corrected and reordered Section 6.7 for generating new SSL certificates.  Updated step 6.10.10 to remove reference to deleteCache.sh  Added step 6.2.29 and Section 6.9 for use with WDK apps   * Modified steps in section 6.7 to use **<*HTTPS/SSL\_Encryption>*** param instead of hardcoded 1024. | N/A |
| 10-Dec-14 | 14.0 | Kirstin Womble Thomas | * Changed Web Common Environment version to 2.1.5   Added <Shell\_Prompt\_Desc> params in step 6.2.29. Also added step 6.4.9 to setup color coding. | N/A |
| 25-Jan-16 | 15.0 | Pavankumar Dronamraju | * Added new steps to shut down and start tomcat at 6.9.2 and 6.9.7 respectively * Added a new step at 6.10.3 to create log directory * Modified Section 6.5 and added step 6.2.7 to work with all Java installation extensions * Removed references to Solaris OS. Linux is current standard. | N/A |
| 19-Feb-16 | 16.0 | Pavankumar Dronamraju | * Updates to align with changes to service governance documentation | N/A |
| 22-Feb-16 | 17.0 | Pavankumar Dronamraju | * Removed decommissioned reference and updated standardised Approach and Implementation process wording | N/A |
| 22-Feb-16 | 18.0 | Andrew Barford | * Removed reference to decommissioned document | N/A |
| 25-Jul-16 | 19.0 | Kirstin Thomas | * Updated to use the new ITMS TIP/TIR template and updated to DCC TIP standard * Added note for PermSize * Added additional steps for WADS * Clarified server.xml steps * Added additional step 4.4.19 to change ACL of log path * Removed WDK section from this TIP and <***Use\_With\_WDK>*** params   **Note:** Section references above have not been updated with transition to new template format | N/A |
| 25-Jul-16 | 20.0 | Kirstin Thomas | * No change in TIP content * Correction of Date & Author for this Revision History for previous 19.0 version * QA approval mistakenly missed during 19.0 approval. | N/A |
| 16-Dec-16 | 21.0 | Pavan Dronamraju | * Added a new step 4.5.6. Modified the document for technical accuracy. | N/A |
| 10-Aug-2017 | 22.0 | Deepika Kumar | * Updated steps 4.5.14 , 4.5.15 and 4.5.18 to have SAN added to tomcat certificate. * Updated few steps to request screen exhibits. | N/A |
| 06-Dec-2017 | 23.0 | Vigneshram Rengarajan | * Added a new step in 4.5.12 and 4.5.13 to enable TLS 1.2 protocol * Updated few steps to request screen print exhibits * Updated the answer prompts for questions 5 and 6 in the step 4.5.15 | 4.0 |

# Revision History (TIR)

Table 26 - Revision History

| Date | Version | Author | Reason For Revision |
| --- | --- | --- | --- |
| 08-Mar-2018 | 1.0 | Priyanga Palani | This is the first issue of this document. |
| 12-Mar-2018 | 2.0 | Priyanga Palani | This is for Technical Lead & IT QRC review and approval |

1. - ACS Request Template

This Appendix provides a template for submitting a Remedy ticket to the ACS resolving agency to complete Step 4.7.11. Substitute the items in chevrons (<>) with the relevant text as indicated.

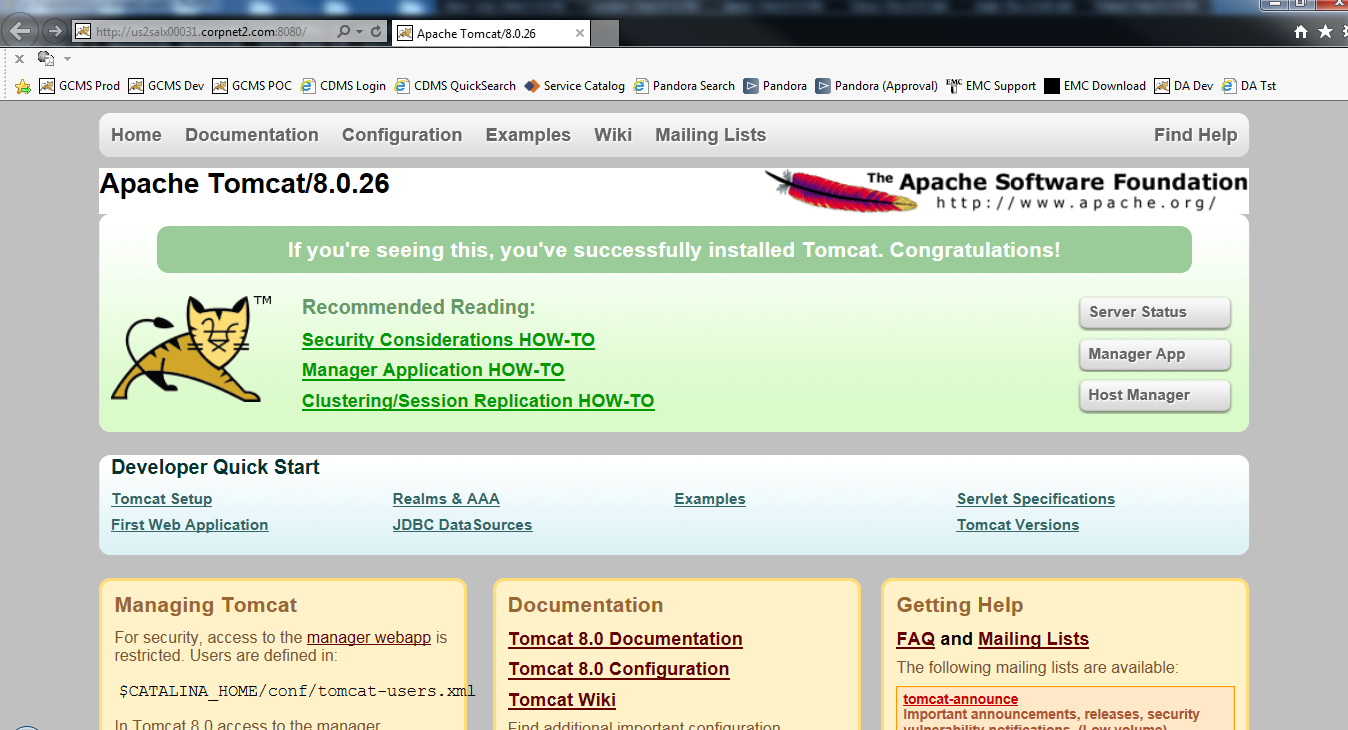
As root please execute the following operations on server ***<Installation\_Host\_FQDN>***

1. Move file /opt/***<Installation\_Account>***/dmwebserver to /etc/init.d/dmwebserver

Any existing file of this name may be overwritten.

1. Set ownership on /etc/init.d/dmwebserver to root:root
2. Set protection on /etc/init.d/dmwebserver to 744
3. Run as root the command:  
    chkconfig --add dmwebserver
4. - Web Server Default Screen

A screen like the one displayed in this section should be returned as the test for successful startup of the web server in step 4.4.25



1. - Tomcat Ports

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tomcat Instance** | **Ports** | | | |
| **Non-SSL** | **SSL** | **AJP** | **Shutdown** |
| 1 | 8080 | 8443 | 8009 | 8005 |
| 2 | 8090 | 8453 | 8019 | 8015 |
| 3 | 8100 | 8463 | 8029 | 8025 |
| 4 | 8110 | 8473 | 8039 | 8035 |
| 5 | 8120 | 8483 | 8049 | 8045 |
| 6 | 8130 | 8493 | 8059 | 8055 |
| 7 | 8140 | 8503 | 8069 | 8065 |
| 8 | 8150 | 8513 | 8079 | 8075 |
| 9 | 8160 | 8523 | 8089 | 8085 |
| 10 | 8170 | 8533 | 8099 | 8095 |
| 11 | 8180 | 8543 | 8109 | 8105 |
| 12 | 8190 | 8553 | 8119 | 8115 |
| 13 | 8200 | 8563 | 8129 | 8125 |
| 14 | 8210 | 8573 | 8139 | 8135 |
| 15 | 8220 | 8583 | 8149 | 8145 |
| 16 | 8230 | 8593 | 8159 | 8155 |
| 17 | 8240 | 8603 | 8169 | 8165 |
| 18 | 8250 | 8613 | 8179 | 8175 |

1. - Screen Shot Evidence

Below are any screen shots or other evidence that was collected during the process (of installation or verification).

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **01** | **TIP section and step number:** | **4.1.1** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **02** | **TIP section and step number:** | **4.1.2** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **03** | **TIP section and step number:** | **4.2.1** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **04** | **TIP section and step number:** | **4.2.2** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **05** | **TIP section and step number:** | **4.4.25** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **06** | **TIP section and step number:** | **4.4.26** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **07** | **TIP section and step number:** | **4.5.19** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **08** | **TIP section and step number:** | **4.5.20** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **09** | **TIP section and step number:** | **4.5.21** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **10** | **TIP section and step number:** | **4.6.11** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **11** | **TIP section and step number:** | **4.6.12** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **12** | **TIP section and step number:** | **4.6.13** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **13** | **TIP section and step number:** | **4.7.18** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **14** | **TIP section and step number:** | **4.9.1** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **07-Mar-2018** |  |  |
| **Screen Shot** | | | |
|  | | | |

1. - Typescript Evidence

Below are any links to typescript files or other evidence that was collected during the process (of installation or verification).

|  |  |  |  |
| --- | --- | --- | --- |
| **Exhibit Number:** | **01** | **TIP section and step number:** | **4.1 – 4.7** |
| **Installation Iteration:** | **01** | **Installer Initials;** | **PP** |
| **Installation Date:** | **08-Mar-2018** |  |  |
| **Typescript File Location/Document ID** | | | |
| **Filename *Typescript Evidence - Tomcat Web Environment for D2 in primary server us1sxlx00194.doc***  **Consolidated Typescript / Evidence Script in CDMS:**  Please login into CDMS Application and navigate to below path:  ***<KSG> >> Corporate >> CBS >> AS >> DOCUMENTUM CC >> CM HOSTING >> TIP Results and TIR***  Document Name:  ***REC\_00000616245*** | | | |