Environment

Installation Procedure

D_12_7_4

RATIONAL

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1 Installation

Overview

This package is composed of:

☐ 1. D_12_7_4 Environment Tools tape

☐ 2. These installation instructions

☐ 3. D_12_7_4 Environment Release Information

When installing the Environment release, you can view the upgrade process as a series of phases. These phases must be performed in a serial manner.

☐ 1. Assessing the impact of the release on the user community

☐ 2. Verifying prerequisites to the installation

☐ 3. Preparing the user community and the machine

☐ 4. Loading the release

☐ 5. Cleaning up

These phases must be performed in a serial manner, as must the steps in each of the phases. This Installation Procedure is organized by phase, with each phase comprising a subsection of this document.

A number of steps are automated through the use of a standard procedure called Do_step. If you are unfamiliar with the use of this procedure, refer to Appendix A for further information and the format of the instructions below.

NOTE: A number of the steps will display a filtered error log. When these are displayed, a line containing an ellipsis (...) is appended. If this is the only line you see in the display, it indicates there were no errors.

The following sections take you through the installation process one phase at a time. Be sure to complete ALL of the phases of installation and to perform these phases in the order in which they appear here.

Warning: Follow these installation steps in a serial manner. Do not attempt any other work or even to look at objects on the system (such as Environment specs) while performing this installation. All users must be logged off during the installation. Failure to adhere to these instructions may result in the failure of portions of the installation.

Upgrade Time Estimates

This upgrade takes half an hour, plus the amount of time needed to reboot the system (which can take an hour or more).

The steps are:

☐ 1. Load the D_12_7_4 tools tape. (5 minutes)

☐ 2. Run the `Do_Step("Install_Patch")` program. This installs the patch and shuts down the machine. (15 minutes)

☐ 3. Reboot the machine. (Up to an hour or more)

☐ 4. Run the `Do_Step("Record_Installation")` and `Do_Step("Destroy_Archive")` programs. (10 minutes)

Assessing the Impact of the Release

In this phase of the installation, you will assess the impact of the release on the user community and the machine.

☐ 1. When installing a new Environment release or a new layered product release, private activity files may become obsolesced (i.e., the subsystems they reference may not be compatible with the upgraded software). When installing several products at once, the Environment release should be installed first. Subsequently, each layered product can be installed. Following this process will result in the system default activity (`!Machine.Release.Current.Activity`) referencing a compatible set of subsystems.

   After the upgrades have been completed, each user should merge the contents of the default activity into his or her own private activity file with the command `Activity.Merge`.

☐ 2. The machine will be rebooted during this installation.

❏ 3. The D_12_7_4 release includes an archive for the Rational Access product. After the upgrade, the nested archive can be found in the `!Machine.Release.Archive` world. The product may be installed using the Rational Access installation procedure, shipped as part of the D_12_7_4 release. Contact Order Administration for additional copies. (See the Environment Release Information to determine if these products need to be installed; note that if these products are to be installed, the LOAD_TAPE step of the product installation can be skipped as the release archives have already been loaded as part of the D_12_7_4 LOAD_TAPE step).

❏ 4. Expect this upgrade to use about 10 megabytes of available disk space. Most of this usage will be reclaimed after the archives are deleted and garbage collection has run (see the "Cleaning up" section).

Verifying Prerequisites to the Installation

In this phase of the installation, you will verify that the prerequisites for installing this upgrade have been met. Do not proceed with the upgrade until all prerequisites have been fulfilled.

❏ 1. You have read the Release Information.

❏ 2. You have read this entire Installation Procedure.

❏ 3. The system is executing Environment D_12_7_3 (D3.1). If the system is executing any prior Environment release, it **MUST** be upgraded to D_12_7_3 (D3.1) before proceeding.

❏ 4. You have verified that there is at least 10 megabytes of free *usable*[1] disk space on one of the system disks to account for worst case volume loading. Most of this space will be reclaimed after D_12_7_4 and Rational Access have been installed and cleaned up, and garbage collection has run.

Preparing the User Community and the Machine

In this phase of the installation you will prepare both the user community and the machine for the installation.

❏ 1. Have a primary backup made.

❏ 2. Have a full backup made (after the primary).

❏ 3. Verify the full backup tape set using the Verify_Backup procedure.

[1]This space should be measured as that which will not cause garbage collection to start.

❐ 4. Locate a DFS backup tape. If not available, arrange for one to be made at some time prior to this upgrade.

Warning: It is extremely important to have these backups available in the event that there is a failure during the upgrade to D_12_7_4. Once started, it is not possible to revert back to the older Environment except by restoring a backup. Taking both primary and full backups gives you two backup recovery options should you need to revert to the previous Environment release.

Loading the Release

In this phase, you will load the tools required to install the user visible part of the release onto the machine. The release world located in !Machine.Release.Archive.Environment.D_12_7_4 contains nested archives. This phase of the installation takes about half an hour plus the time required for the system to reboot.

❐ 1. Load the Environment D_12_7_4 tools tape onto the tape drive.

❐ 2. Log in on an account which is a member of group *Privileged*.

The following steps utilize the procedure Do_step as described in Appendix A.

❐ 3. **LOAD_TAPE**

[5 Minutes]
This loads the contents of the tools tape. Unlike the other steps in this installation procedure, this step can be executed from any command window (as opposed to being executed from !Machine.Release.Archive.Environment.D_12_7_4 which does not yet exist). Answer the mount request at the operator console. There should be no errors.

NOTE: If the machine does not have the Do_step procedure, use Archive.Restore to load the tape.

NOTE: This step also loads the Rational Access archive, as described in the "Assessing the Impact of the Release" section above. This is loaded in the !Machine.Release.Archive world.

NOTE: If you wish to upgrade additional machines that are connected via a network, the !Machine.Release.Archive.Environment.D_12_7_4 archive can be copied over the network using the Archive.Copy command, in place of the LOAD_TAPE step. This will save the step of having

to physically load the tools tape on each machine being upgraded.

☐ 4. Traverse to `!Machine.Release.Archive.Environment.D_12_7_4`.

☐ 5. **INSTALL_PATCH**   *[15 minutes]*
This step will execute the steps necessary to do most of the installation. After each step, you will be asked if you want to continue with the next step. Review any logs displayed by the step before continuing to the next step. Appendix B contains more detailed information about the steps executed by this step and possible errors. The steps may be run individually following the instructions in Appendix B, in place of this step, if desired.

NOTE: This step will verify that no one else is logged in to the system, and prevent additional logins until after the reboot. It will also verify that the system is running Environment release D_12_7_3 (see the "Verifying Prerequisites" section of this document). When the patch installation is complete, it will initiate a system shutdown.

After this step has completed and the machine has been successfully scheduled to shutdown, you may log off; note that your session will be automatically logged off when the machine shuts down if you do not log off prior to shutdown.

☐ 6. Making a new DFS backup tape

When the system restarts, load a blank tape in the tape drive and make a backup tape with the new D_12_7_4 DFS.

Below is sample console dialogue for a Series 400S machine. Filenames and messages may vary slightly for different processors and configrations.

```
13:25:53 +++ Operator Shutdown_Warning  5:00.000 by OPERATOR.S_1
13:25:53 --- Shutdown Release  by OPERATOR.S_1
13:25:53 --- Shutdown Comment Install_Environment_Patch_Release_D_12_7_4

====>> Environment Log <<====
13:27:44 +++ Login_Manager Logout OPERATOR.S_1 Port 240

====>> Daemons (System Job 5) <<====
from System: 1:29:58 PM; System will shutdown in  1:00.000

====>> Environment Log <<====
```

```
13:30:58 +++ Shutdown_Task Disabling_Terminals
13:31:10 +++ Shutdown_Task Killing_Job  4: System
13:31:10 +++ Shutdown_Task Killing_Job  5: Daemons
13:31:10 +++ Shutdown_Task Killing_Job  6:
13:31:10 +++ Shutdown_Task Killing_Job  7:
13:31:10 +++ Shutdown_Task Killing_Job  209: Rci_Rev2_0_2_I386_Unix_Als_Xt_FTP
13:31:12 +++ Shutdown_Task Killing_Job  213: TCP_IP_Test.Server
13:31:13 +++ Shutdown_Task Killing_Job  215: Mail Distribute Server
13:31:13 +++ Shutdown_Task Killing_Job  219: Mail LOCAL Carrier
13:31:14 +++ Shutdown_Task Killing_Job  223: TestMate 2_2_0
13:31:34 +++ Shutdown_Task Unable_To_Kill_Previous_Job (Killer hung)
13:31:34 +++ Shutdown_Task Killing_Job  224: Print Queue Server
13:31:34 +++ Shutdown_Task Killing_Job  234: Mail SMTP Carrier
13:31:37 +++ Shutdown_Task Killing_Job  237: Archive Server
13:31:37 +++ Shutdown_Task Killing_Job  239: Console Command Interpreter

====>> Console Command Interpreter (System Job 239) <<====
username:
************************************************************************
*** Job terminated by *SYSTEM at 1:31:38 PM
***
************************************************************************


====>> Environment Log <<====
13:31:38 +++ Shutdown_Task Killing_Job  241: Print Spooler
13:31:38 +++ Shutdown_Task Killing_Job  243: Teamwork_Interface (2_5_1_1) Dtia
             Server
13:31:47 +++ Shutdown_Task Killing_Job  244: Ftp Server
13:31:48 +++ Shutdown_Task Killing_Job  245: Rci_Compiler Rev2_0_5
13:32:08 +++ Shutdown_Task Unable_To_Kill_Previous_Job (Killer hung)
13:32:08 +++ Shutdown_Task Killing_Job  248: Smooth Snapshots
13:32:08 +++ Shutdown_Task Killing_Job  249: Rational_Access Commands Rev1_0_1
13:32:13 +++ Shutdown_Task Killing_Job  253: DTIA Remote_Operations Server
             Rev11_4
13:32:18 +++ Shutdown_Task Killing_Job  254: PDL Registration (RATIONAL_2167A,
             PDL_11)
13:32:28 +++ Shutdown_Task Starting_Om_Shutdown
13:32:39 +++ Low_Level_Action.Abandon_For_Shutdown No_outstanding_actions


====>> CONFIGURATOR <<====
starting virtual memory shutdown
starting snapshot
snapshot is finished
virtual memory shutdown at ( 38, 28-MAY-93 13:32:45)
system shutdown is complete


****************************************
Sequencer has detected a machine check.

**************************************************
Booting R1000 IOP after R1000 Halt or Machine Check detected
  Boot Reason code = 0C, from PC 0001ADA2

Restarting R1000-400S May 28th, 1993 at 13:33:24

OPERATOR MODE MENU - options are:
    1 => Change BOOT/CRASH/MAINTENANCE options
    2 => Change IOP CONFIGURATION
    3 => Enable manual crash debugging (EXPERTS ONLY)
    4 => Boot IOP, prompting for tape or disk
    5 => Boot SYSTEM

Enter option [Boot SYSTEM] : <RETURN>

Logical tape drive 0 is an 8mm cartridge tape drive.
```

```
Logical tape drive 1 is declared non-existent.
Logical tape drive 2 is declared non-existent.
Logical tape drive 3 is declared non-existent.
Booting I/O Processor with Bootstrap version 0.4

Initializing M400S I/O Processor Kernel 4_2_18
Disk  0 is ONLINE and WRITE ENABLED
Disk  1 is ONLINE and WRITE ENABLED
Disk  2 is ONLINE and WRITE ENABLED
Disk  3 is ONLINE and WRITE ENABLED
IOP Kernel is initialized
Initializing diagnostic file system ... [OK]
======================================================
Restarting system after R1000 Halt => Shutdown from Environment

CrashSave has created tombstone file R1000_DUMP1.

>>> NOTICE: the OPERATOR_MODE switch is set to INTERACTIVE <<<
CLI/CRASH MENU - options are:
   1 => enter CLI
   2 => make a CRASHDUMP tape
   3 => display CRASH INFO
   4 => Boot DDC configuration
   5 => Boot EEDB configuration
   6 => Boot STANDARD configuration
Enter option [Boot STANDARD configuration] : 1
CLI> backup
```

When the DFS backup tape is finished, the system will return to the `CLI>` prompt.

❒ 7. Reboot the machine

```
CLI> boot
Enter name of configuration to boot [STANDARD] : <RETURN>
```

The system will boot in the normal amount of time.

❒ 8. Log in on an account which is a member of group *Privileged*.

❒ 9. Go to `!Machine.Release.Archive.Environment.D_12_7_4`.

❒ 10. **RECORD_INSTALLATION** This step records the release information in `!Machine.Release.Current.Products`. This is a required step and establishes that the release has successfully been installed.

❒ 11. Series 400 networking update

If the system is not a Series 400, skip this step.

Note that the D_12_7_4 release includes a fix to a problem that caused the transport route table to lose its data on Series 400 machines (see section 7.2.5 of the D_12_7_4 Release Information).

If you have a Series 400 and use IP routing (i.e., there is a non-empty file in !Machine called Transport_Routes, then you should remove the Transport_Route_Refresh_Start procedure from !Machine.Initialization.Local, which was a workaround for that problem.

Note that since the workaround was installed by hand, it may have a different name or be located in a different part of !Machine.Initialization.

Cleaning up

In this phase, you will perform some cleanup activities.

❐ 1. **DESTROY_ARCHIVE**   This step destroys the release archive library in !Machine.Release.Archive. Only execute this step after the D_12_7_4 release has been running successfully for several days and you are confident there are no problems. There will be an error when an attempt is made to set the context back to the release archive library. This can be ignored.

❐ 2. Destroy older release libraries located in !Machine.Release.Environment. It is recommended that the latest release library (D_12_7_4) be maintained for possible future use, especially if there were any errors during the installation, but this is not a requirement and this library may also be deleted.

❐ 3. Have customer take a full Environment backup.

Post-Installation Customer Checklist

☐ 1. Make a full backup of the Environment.

☐ 2. Make a backup of the DFS.

☐ 3. Each user should merge the contents of the default activity into his or her own
private activity file with the command **Activity.Merge**.

```
Activity.Merge (Source => "!Machine.Release.Current.Activity",
                Mode => Activity.Differential,
                Target => ">>User Activity<<");
```

Note that this operation may have undesirable side affects of changing
subsystem references which were explicitly set by the user.

☐ 4. Distribute the Release Information to the user community. A line printer copy
of the D_12_7_4 Release Information can be found in
!Machine.Release.Release_Notes.

☐ 5. Update the **!Machine.Editor_Data.Daily_Message** file indicating that
Environment D_12_7_4 has been installed. Include information about previous
items in this checklist when appropriate.

☐ 6. If desired, arrange for installation of the Rational Access product. An
installation archive was installed in **!Machine.Release.Archive** as part of the
D_12_7_4 upgrade, and installation procedures are included with the D_12_7_4
release.

release. In the event you want to modify a step, you can use the "PROMPT => <STEP>" form when invoking Do_step. See the spec of procedure Do_step (located in !Commands) for more detailed information.

Warning: *If you interrupt the execution of Do_step (by using Job.Interrupt such as CONTROL-G) it is possible that certain interactive commands executed by some steps, such as Common.Definition, may fail with an exception and display a message such as*

```
Unable to read file due to Constraint_Error (Null Access)
```

In general, this message has no negative impact on the execution or completion of the step, and can be ignored.

Note: *When multiple steps are executed, you will be prompted between steps with the following:*

```
Continue with <Step Name> step (Continue | Skip | Quit)?  [Continue] : [input]
```

Select the action to be taken, one of Continue, Skip, or Quit. Continue (the default if PROMOTE is entered without typing anything) results in the step <Step Name> being executed. Skip will skip <Step Name> and prompt with the step following <Step Name>. Quit results in termination of Do_step without further steps being executed.

B Substeps in the Install_Patch Step

The step INSTALL_PATCH runs the following steps in this order:

☐ 1. **USERS_CHECK**
[1 Minute]
This step sets the login limit to 1 and verifies that there are no other users logged into the system. Note that the login limit will be restored to the original value when the machine is rebooted later during the installation.

☐ 2. **CONFIGURATION_CHECK** *[1 Minute]*
This step verifies that the machine is running Environment release D_12_7_3. If it is not, it will not proceed with the installation--refer to the "Verifying Prerequisites" section of this document.

☐ 3. **RELEASE_RESTORE**
[15 Minutes]
This step restores the `Release` archive. When completed, a filtered error log is displayed (`Restore_Release_Log_Summary` located in `!Machine.Release.Archive.Environment.D_12_7_4.Logs`). Examine this log for errors. Ignore the following types of errors (if present):

```
!!! can't restore link...

!!! Creating CMVC database ...
    no history is currently
    being saved.

++* Can't resolve default
    switch file ...

++* can't set subclass for ... to
    TEXT (ILLEGAL_OPERATION).
```

☐ 4. **INSTALL_PRODUCT**
[5 Minutes]
This step executes the `Install_Product` procedure located in `!Machine.Release.Environment.D_12_7_4.`

When completed, a window of
`!Machine.Release.Environment.D_12_7_4.`
`Logs.Install_Product_Log_Summary` is
displayed.

□ Examine `Install_Product_Log_Summary` for
errors. There should be none.

□ 5. **SHUTDOWN**

[10 Minutes]
This step sets the shutdown warning delay to 5
minutes, and then initiates the shutdown
procedure.

After this step has completed and the machine
has been successfully scheduled to shutdown, you
may log off; note that your session will be
automatically logged off when the machine shuts
down if you do not log off prior to shutdown.