





*IBM Rational Synergy  
Upgrade Instructions for UNIX  
Release 7.1*

Before using this information, be sure to read the general information under Appendix “D: Notices” on page 81.

This edition applies to Version 7.1, Rational Synergy (product number 5724V66) and to all subsequent releases and modifications until otherwise indicated in new editions.

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# 1

## Introduction

### Before you upgrade

This chapter explains what you need to know **before** you upgrade an existing IBM® Rational® Synergy for UNIX® installation to Rational Synergy Release 7.1.

**Note** You must read "Appendix B: Upgrade and Synergy 7.1" on page 73 before deciding to upgrade.

Upgrades of Rational Synergy releases prior to 6.4 are not supported by Release 7.1. To upgrade from a pre-6.4 release, you need to upgrade to one of the releases that is supported by Release 7.1 (that is, 6.4, 6.5, or 7.0), and then upgrade to Release 7.1 using the document you are now reading. To upgrade from a release prior to 6.4, refer to the Release 6.5 *Upgrade Instructions*, as appropriate. These documents are available as explained in "Rational documentation" on page 5.

### Installing Windows clients

If the Synergy server has been or will be installed elsewhere, and you need to install only the Windows client, you do **not** need to read these *Upgrade Instructions*. Instead, follow the steps in the *Rational Synergy Installation Guide for Windows*. You can get this document as explained in "Rational documentation" on page 5.

### Readme

The *Readme* (formerly called the *Release Notes*) may contain vital news about your Rational Synergy software that has been issued **after** the *Rational Synergy Upgrade Instructions for UNIX* for Release 7.1 is published. Review the *Readme* before upgrading your software. The most current revision of the *Readme* is available as explained in "Rational documentation" on page 5.

## Upgrade instructions

The *Upgrade Instructions* that you are now reading describe how to upgrade an existing 6.4, 6.5, or 7.0 Rational Synergy UNIX installation to Rational Synergy Release 7.1. These instructions explain how to convert existing Rational Synergy databases for use with Rational Synergy Release 7.1.

**Note** To ensure that you have the latest revision of the *Rational Synergy Upgrade Instructions for UNIX*, download an electronic copy from the IBM Rational Synergy Info Center (<http://publib.boulder.ibm.com/infocenter/rsdp/v1r0m0/index.jsp>).

In addition to these *Upgrade Instructions* and the *Readme*, you will also need to read the *Rational Synergy Installation Guide for UNIX or the Rational Synergy Installation Guide for UNIX on Oracle*. If you are installing Release 7.1 for UNIX at a new site, you do not need to read these *Upgrade Instructions*. Instead, follow the steps in the *Rational Synergy Installation Guide for UNIX or Rational Synergy Installation Guide for UNIX on Oracle*. To learn how to obtain these documents, refer to “Rational documentation” on page 5.

## Consulting services

The upgrade process for databases that were customized using a custom model database can be complicated, and is not described here. IBM offers consulting services and can perform this work for you. For more information, contact your local sales representative. If you need contact information, visit the Web site at <http://www.ibm.com/planetwide/>

## Contacting IBM Rational Software Support

If the self-help resources have not provided a resolution to your problem, you can contact IBM® Rational® Software Support for assistance in resolving product issues.

**Note** If you are a heritage Telelogic customer, a single reference site for all support resources is located at <http://www.ibm.com/software/rational/support/telelogic/>

## Prerequisites

To submit your problem to IBM Rational Software Support, you must have an active Passport Advantage® software maintenance agreement. Passport

Advantage is the IBM comprehensive software licensing and software maintenance (product upgrades and technical support) offering. You can enroll online in Passport Advantage from

<http://www.ibm.com/software/lotus/passportadvantage/howtoenroll.html>

- To learn more about Passport Advantage, visit the Passport Advantage FAQs at [http://www.ibm.com/software/lotus/passportadvantage/brochures\\_faqs\\_quickguides.html](http://www.ibm.com/software/lotus/passportadvantage/brochures_faqs_quickguides.html).
- For further assistance, contact your IBM representative.

To submit your problem online (from the IBM Web site) to IBM Rational Software Support, you must additionally:

- Be a registered user on the IBM Rational Software Support Web site. For details about registering, go to <http://www.ibm.com/software/support/>.
- Be listed as an authorized caller in the service request tool.

## Submitting problems

To submit your problem to IBM Rational Software Support:

1. Determine the business impact of your problem. When you report a problem to IBM, you are asked to supply a severity level. Therefore, you need to understand and assess the business impact of the problem that you are reporting.

Use the following table to determine the severity level.

| Severity | Description  |
|----------|--|
| 1        | The problem has a <i>critical</i> business impact: You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution. |
| 2        | This problem has a <i>significant</i> business impact: The program is usable, but it is severely limited.  |

| Severity | Description  |
|----------|--|
| 3        | The problem has <i>some</i> business impact: The program is usable, but less significant features (not critical to operations) are unavailable.              |
| 4        | The problem has <i>minimal</i> business impact: The problem causes little impact on operations or a reasonable circumvention to the problem was implemented. |

2. Describe your problem and gather background information, When describing a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Rational Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:
  - What software versions were you running when the problem occurred?  
To determine the exact product name and version, use the option applicable to you:
    - Start the IBM Installation Manager and select **File > View Installed Packages**. Expand a package group and select a package to see the package name and version number.
    - Start your product, and click **Help > About** to see the offering name and version number.
  - What is your operating system and version number (including any service packs or patches)?
  - Do you have logs, traces, and messages that are related to the problem symptoms?
  - Can you recreate the problem? If so, what steps do you perform to recreate the problem?
  - Did you make any changes to the system? For example, did you make changes to the hardware, operating system, networking software, or other system components?
  - Are you currently using a workaround for the problem? If so, be prepared to describe the workaround when you report the problem.
3. Submit your problem to IBM Rational Software Support. You can submit your problem to IBM Rational Software Support in the following ways:
  - **Online:** Go to the IBM Rational Software Support Web site at <https://www.ibm.com/software/rational/support/> and in the Rational

support task navigator, click **Open Service Request**. Select the electronic problem reporting tool, and open a Problem Management Record (PMR), describing the problem accurately in your own words.

For more information about opening a service request, go to <http://www.ibm.com/software/support/help.html>

You can also open an online service request using the IBM Support Assistant. For more information, go to <http://www.ibm.com/software/support/isa/faq.html>.

- **By phone:** For the phone number to call in your country or region, go to the IBM directory of worldwide contacts at <http://www.ibm.com/planetwide/> and click the name of your country or geographic region.
- **Through your IBM Representative:** If you cannot access IBM Rational Software Support online or by phone, contact your IBM Representative. If necessary, your IBM Representative can open a service request for you. You can find complete contact information for each country at <http://www.ibm.com/planetwide/>.

## Rational documentation

The Rational documentation is available in HTML and PDF on the documentation DVD, and in PDF on the IBM Rational Synergy Info Center (<http://publib.boulder.ibm.com/infocenter/rsdp/v1r0m0/index.jsp>) The documentation can be made available to all users by mounting the DVD on a shared drive.

Note that information in the *Readme* takes precedence over information in the documentation or in any of the Rational Synergy Help systems. The most up-to-date version of the *Readme* is available to Rational Synergy users on the Rational Synergy Info Center.

## Conventions used in this guide

The following conventions are used in this guide.

### Fonts and symbols

The following table describes the font and symbol conventions used in this guide.

| Typeface              | Description   |
|-----------------------|---|
| <i>Italic</i>         | Used for book titles and terminology. Designates names of roles ( <i>build_mgr</i> ), states ( <i>working</i> ), groups ( <i>ccm_root</i> ), and users ( <i>ccm_user</i> ).   |
| <b>Bold</b>           | Used for items that you can select and menu paths, dialog box options and titles, and for emphasis.   |
| Courier               | Represents command syntax to be entered verbatim, and commands on buttons. Also used to signify computer output that appears on-screen and the names of files ( <code>remexec.cfg</code> ), attributes ( <code>modify_time</code> ), commands ( <code>ccm start</code> ), functions ( <code>remote_type</code> ), types ( <code>csrc</code> ), and paths ( <code>/usr/local/ccm</code> ). |
| <i>Courier Italic</i> | Represents values in a command string that you supply. For example, <code>/home/project_data/commands</code>  |
| Greater than (>)      | Shows a menu path, prompt, or sequence of actions necessary to complete an operation.   |
| Pipe (   )            | Shows that, from the choices shown, you can specify only one option or argument.  |
| Brackets ( [...])     | Shows the different options available for a command.  |
| Ellipses ( ... )      | Shows that you can specify more than one of a particular type of argument.  |

This document also uses the following conventions:

**Note** Contains information that should not be overlooked.

**Caution** Contains critical information that must be observed or damage to the database or system could result.



### **Release-specific instructions**

Unless otherwise stated, all instructions in the following chapters are to be used regardless of whether you are upgrading from 6.4, 6.5, or 7.0. Whenever instructions are specific to certain releases, the releases are noted.

### **Database-specific instructions**

Unless otherwise stated, information in this document pertains to all UNIX users, including those running on Oracle®. Whenever instructions are specific to certain databases, the situations are noted.

### **Command line instructions and examples**

All command line instructions and examples are shown for the standard Bourne shell `/bin/sh`. If you use an alternative shell, such as the C shell, you must make the appropriate changes. For example, replace:

```
PATH=/usr/local/ccm71/bin:$PATH; export PATH
```

with:

```
setenv PATH /usr/local/ccm71/bin:$PATH
```

Rational Synergy commands assume a default installation directory of `/usr/local/ccm`. However, you can have more than one installation of Rational Synergy on a machine (for example, when you install, and upgrade to, a new release). Install each release of Rational Synergy in a release-specific directory; for example, `/usr/local/ccm71`. Optionally, you can link `/usr/local/ccm` to your current default release.

To select an installation directory, set the environment variable `CCM_HOME` to the absolute path for that installation, and include `$CCM_HOME/bin` in the `PATH` environment variable.

**Note** Unless otherwise noted, the examples in this document assume that your previous installation directory is `/usr/local/ccm70` and your Release 7.1 installation directory is `/usr/local/ccm71`.



# 2

## System Requirements

This chapter summarizes the system requirements for the machine on which Rational Synergy Release 7.1 is to be installed. For full information, read the *Rational Synergy Installation Guide for UNIX*, or *Rational Synergy Installation Guide for UNIX on Oracle*.

### Requirements

#### Disk space requirements

For disk space information, see the Release 7.1 *Rational Synergy Installation Guide for UNIX*, or *Rational Synergy Installation Guide for UNIX on Oracle*.

In most cases, the upgrade procedures require that the previous installation remain in place while the new installation and upgrade are performed, so sufficient disk space for both installations is required.

You must also allow sufficient space or other media for backups.

#### UNIX installation requirements

Before installing the UNIX software, make sure that you meet the following UNIX installation requirements.

**Note** All Informix® database servers must be listed in `/etc/services`, or its NIS equivalent, not just those supporting remote engines.

#### Resource requirements

Following are the UNIX resource requirements.

- A file system on your installation machine must have the required amount of free space for the Rational Synergy installation directory as outlined in the *Rational Synergy Installation Guide for UNIX*, or *Rational Synergy Installation Guide for UNIX on Oracle*.
- In most cases, the upgrade procedures require that the previous installation remain in place while the new installation and upgrade are performed, so sufficient disk space for both installations is required.
- Your server machines must be configured with the disk space, memory, swap space, shared memory and semaphores outlined in the *Rational Synergy*

*Installation Guide for UNIX, or Rational Synergy Installation Guide for UNIX on Oracle.*

- On some UNIX systems, NFS caches are not updated even as a result of local activity. This can cause problems if you run an interface and engine on some UNIX systems with the file system portion of the Rational Synergy database NFS-mounted from another system. To solve this problem, mount the database file system with NFS caching turned off.

## Software requirements

Following are the UNIX software requirements.

- A Windows client can connect to a UNIX server in the following ways:  
In Web mode, specify a server URL when starting a session. Web mode uses either HTTP or HTTPS protocol. It does not require the use of the `rexec` protocol.  
In Traditional mode, specify the server as a machine name rather than a URL. Traditional mode uses the `rexec` protocol or a more secure alternative (ESD). The default method is `rexec`.  
For Windows clients to be able to connect to a UNIX server in Traditional mode using the default method, the `rexec` daemon must not be disabled in `/etc/inetd.conf` on the UNIX server. The location of the `inetd.conf` file may vary, depending on the platform on which you are running. Check to see that the `rexec` daemon is enabled. Make sure that it has not been commented out. If you use Web mode or the alternative secure engine connection (using ESD), it does not matter if the `rexec` daemon is enabled or not.
- X11R4 is required for all GUI client machines running on Linux and Solaris platforms for Rational Synergy Classic users.  
X11R5 or greater is required for all GUI client machines running on all other platforms for Rational Synergy or Rational Synergy Classic users.
- The `tsort` command must be in the path.

## Service requirements

Following are the UNIX service requirements.

- Rational Synergy Release 7.1 requires a fixed TCP port for its router service. To reserve this port, add an entry of the following form to the `/etc/services` file or its NIS equivalent.

---

```
ccm7.1_router    5412/tcp    # Rational Synergy router port
```

The first column is the service name, which should be `ccm7.1_router`. The second column starts with the port number. This can be any unallocated port number, but use 5412 if you can. This TCP port number is reserved for Rational by the Internet Assigned Number Authority (IANA).

Make a note of the service name and port number you chose. You must supply that information to `ccm_install`. By default, `ccm_install` uses the service name `ccm7.1_router`, and the reserved port number 5412.

You may also want to reserve port numbers for the CCM server (`ccm_server`) and engine startup daemon (`esd`). Use of `esd` is optional.

- You must have an entry in the `/etc/services` file for each Informix database server. This entry must be visible from the server machine, and from each machine where you will run engines. Note that this information does not apply to users running on Oracle.

If you are running NIS, add the appropriate entries to your master `services` map. If you do not use NIS, you must add these entries to the `/etc/services` file on each relevant machine.

The `/etc/services` entry for a particular database server looks like the following:

```
servername_hostname port_number/tcp
```

Choose any unused value for `port_number`.

For example, if you are using an Informix database and are planning to create an Informix database server on the machine `olga`, create a `services` entry of the form:

```
olga_olga 5432/tcp
```

On some systems, depending on how the system and the send mail configuration are set up, the `hostname` portion of this entry might need to be the long name (fully-qualified domain name):

```
olga_olga.cwi.com 5432/tcp
```

**Note** In some previous releases, a service entry for a database server was required only if you used remote engines. In Release 7.1, the service entry is **always required** for Informix database servers. This does not apply to Oracle users.



# 3

## **Upgrade Methodology**

This chapter presents a secure and proven methodology that users typically use to upgrade a Rational Synergy installation. Use this methodology when you perform the upgrade procedures in the next chapter.

### **Step 1 – Installing Rational Synergy**

Typically, you will want to test the new version of Rational Synergy to make sure it meets your needs. Thus, the first step in the upgrade process is to install the new version while leaving the old version in place. Follow the sequence presented in the appropriate *Rational Synergy Installation Guide*, including installation of the licensing tool and directory service. This may be done on the same machine you are currently using for production. However, the new version is usually installed on a separate machine.

### **Step 2 – Testing the new installation using a copy of a production database**

The second step is to test the new installation. For detailed information on testing Release 7.1, see Appendix B “B: Upgrade and Synergy 7.1” on page 73

### **Step 3 – Upgrading the production server and databases**

Once you have solved any problems that may have occurred during testing and you are satisfied that the new version of Rational Synergy meets your needs, update your production server, production database(s), and all of the clients.





# 4

## Upgrade Procedures

### Introduction

Two upgrade procedures are presented in this chapter. One is called “Checklist for upgrading an existing server” and the other is called “Checklist for upgrading to a new server”.

You can have more than one installation, with the same or different versions, of Rational Synergy on a given machine, for client and engine software. Your existing Synergy databases reside on one or more servers. Informix users may create one or more Informix database servers for each installation.

As a result, there are two ways to upgrade your databases from earlier releases.

**Do one of the following:**

- Create a new 7.1 server on the same or a different machine, then copy your databases to this new server, and upgrade them. Databases may be copied to the new server using `ccmdb backup` or `ccmdb pack` then `ccmdb unpack`, or using `ccmdb dump` and `ccmdb load` in combination with a copy of the file system portion of the database. Perform this procedure when you test Synergy 7.1, and again when you upgrade production databases for live use after you have completed testing.

OR

- Upgrade an existing 6.4, 6.5, or 7.0 server to 7.1, and upgrade all the databases in that server. Note that installing 7.1 using this procedure will immediately perform the server upgrade, and will render the databases unusable under previous releases. Each database on the server must be upgraded to 7.1 before it can be used; the databases do not need to be moved or copied, since they are already in an upgraded server. This procedure should not be used while testing Rational Synergy 7.1, but may be used after you have completed testing on a separate server.

For each server, upgrade the databases on that server using one of these two procedures; you can use different procedures for different servers.

“Upgrading an Existing Server” and “Upgrade to a New Server” are outlined in two different checklists in this chapter. The following paragraphs explain which checklist you need to follow.

Use the “Checklist for upgrading an existing server” on page 17 if:

- Your operating system is or will be compatible with both your previous release of Rational Synergy and Release 7.1, **and**
- You want to upgrade all your databases on the server at the same time, and all those databases can be concurrently offline until the upgrade is complete, **and**
- You do **not** want to create a new Informix database server - you want to upgrade your existing server and its databases in place; this does not apply to users running on Oracle.

**Note** You will receive some performance benefits if you choose to create an Informix database server. Your databases will be unpacked — this causes the database indices to be rebuilt and the data to be defragmented, thereby improving performance.

Use the “Checklist for upgrading to a new server” on page 36 if:

- You are testing the new release of Synergy, **or**
- You need to upgrade to a new operating system that is not compatible with your previous release of Rational Synergy, **or**
- You want to upgrade only some of the databases on a server at this time, leaving the others accessed through the previous release, **or**
- You want to move some databases between file systems, servers, or machines (including from UNIX to Windows, or from Windows to UNIX), **or**
- You want to create a new Informix database server; this does not apply to users running on Oracle.

## Checklist for upgrading an existing server

If you want to upgrade all your databases on the server at the same time, use the following checklist — in the sequence shown — to install the Rational Synergy Release 7.1 software and upgrade your database(s) from a previous release.

**Caution** Following this procedure and installing the 7.1 software on an existing server will immediately perform the server upgrade, and will render the databases unusable under previous releases. Each database on the server must be upgraded to 7.1 before it can be used; the databases do not need to be moved or copied, since they are already in an upgraded server.

**Note** To ensure a trouble-free installation, print a copy of this checklist, and check off each item as you work through the list.

### Pre-installation

- Review the “UNIX installation requirements” (see page 9)
- “Planning your upgrade” (see page 19)
- If applicable, “Obtaining license information” (see page 19)
- “Saving the previous installation” (see page 20)
- “Backing up all databases” (see page 20)
- “Shutting down the previous Synergy databases” (see page 21)
- If necessary, “Upgrading the operating system” (see page 21)

### Installation

- Allocate a “Router port number” (see page 22)
- “Installing Rational Synergy” (see page 22)
- Read “How the installation handles configuration, platform values, and remote execution files” (see page 23)

### **Post-installation**

- “Setting up the Rational Synergy environment” (see page 24)
- If applicable, “Reinstalling PC integrations” (see page 25)
- If applicable, “Merging configuration files” (see page 25)
- “Verifying the installation” (see page 26)

### **Database upgrade**

- Review the “Database upgrade requirements” (see page 27)
- “Upgrading base model databases to 7.1” (see page 27)
- “Testing the database upgrade” (see page 30)

### **Post-upgrade**

- If applicable, “Installing Rational Change 5.2” (see page 32)
- If applicable, read “DCM transfers after upgrade” (see page 32)
- Read about “Purposes, processes, and process rules” (see page 32)
- When no longer needed, “Removing the previous installation” (see page 33)
- If applicable, “Updating ccm symbolic link” (see page 33)
- If applicable, “Installing Windows clients” (see page 33)
- “Making databases available for use” (see page 34)

### **Troubleshooting**

- If you are having problems, review “Troubleshooting” (see page 35)

## Pre-installation

This section explains what you need to do before you install the Rational Synergy software.

### **Planning your upgrade**

Before you run Rational Synergy Release 7.1 on a database, that database must have been upgraded to the 7.1 level and must contain a 7.1 model.

The UNIX server software must be installed and Informix database servers must be upgraded by following these instructions. In addition, all Windows users must also have the 7.1 client installed. You cannot use older clients with 7.1 servers (nor vice versa). To learn how to install Windows clients, refer to the *Rational Synergy Installation Guide for Windows*.

Before starting the upgrade, note the server you are upgrading, and list the databases on that server. Since the databases will all be unavailable during the entire upgrade process, you need to notify the users of those databases and agree on a schedule.

Make sure you have all the information you need, including access to the *Readme* for Release 7.1, the *Rational Synergy Installation Guide for UNIX or the Rational Synergy Installation Guide for UNIX on Oracle*, and the *Rational Synergy Administration Guide for UNIX or Rational Synergy Administration Guide for UNIX on Oracle*, as appropriate.

You should print a copy of the “Checklist for upgrading an existing server” on page 17, to mark as you proceed.

### **Obtaining license information**

To install and run the Rational Synergy software, you need a valid IBM® Rational® License Server. For detailed information, see the Licensing Guide document on the Rational Synergy Information Center (<http://publib.boulder.ibm.com/infocenter/rsdp/v1r0m0/index.jsp>).

The Rational Directory Service (RDS) is also a prerequisite if you intend to run Synergy sessions in Web mode.

For updated server information, see the *Rational Directory Server Product Manual*, available on the Rational Synergy Information Center (<http://publib.boulder.ibm.com/infocenter/rsdp/v1r0m0/index.jsp>).

## **Saving the previous installation**

This section explains how to save your previous installation.

## **Backing up previous installation**

Regardless of the release from which you are upgrading, back up your previous installation.

**Caution** Backing up your previous installation is an important safeguard and should not be skipped.

To back up a previous UNIX installation:

1. Save all files in the Rational Synergy installation directory (`$CCM_HOME`).
2. Save all files in the home directories for the `ccm_root` user.
3. Save all files in the home directories for the `informix` user - Note that this information does not apply to users running on Oracle.
4. Save any system start-up and configuration files in:

```
/etc/services
/etc/rc*.d
/etc.init.d
or equivalent files.
```

## **Saving previous configuration files**

If you use Rational Change, save the previous `ptcli` configuration file if you have modified it. The `ptcli` file is:

```
/usr/local/ccm70/etc/ptcli.cfg
```

## **Backing up all databases**

As user `ccm_root`, use the `ccmsrv status` command to view all of your databases. Then, regardless of the release from which you are upgrading, back up each of your databases prior to the upgrade.

**Note** Backing up your databases is an important safeguard and should not be skipped. For more information about backing up databases, refer to the “Back Up a Database” section of the *Rational Synergy Administration Guide for UNIX* or *Rational Synergy Administration Guide for UNIX on Oracle*.

If you anticipate that the upgrade will still be running when your regular scheduled backups, builds, DCM transfers, and other background jobs are run,

temporarily disable those scheduled activities. You must remember to turn them back on after the upgrade.

Use your normal procedures for backing up your databases. You may need to use the `ccmdb backup`, `ccmdb pack`, `ccmdb dump`, or `ccmsrv archive` commands. If you have a customized model database, remember to back it up as well as all your production databases.

### Shutting down the previous Synergy databases

You must shut down all the databases on the server to be upgraded. Informix users should **not** shut down the database server itself.

1. Shut down all sessions running on the old installation directory. As user `ccm_root`, run the `ccmdb shutdown` command on each active database.

```
$ su - ccm_root
ccm_root$ CCM_HOME=/usr/local/ccm70; export CCM_HOME
ccm_root$ PATH=$CCM_HOME/bin:$PATH; export PATH
ccm_root$ ccmdb shutdown database_path (for each database)
```

2. Still as user `ccm_root`, stop the Rational Synergy daemons running on this server. If this server is the only server still running the earlier releases, you should shut down all daemons:

```
ccm_root$ ccm_stop_daemons
```

If there are other servers still running on the same earlier release, you should shut down only the object registrar and ESD processes running on this server. Use `ccm monitor` to view a list of CM processes, and kill the object registrars and ESD processes running on this server.

**Caution** There could be object registrars and ESD processes from multiple servers running on the same machine; be careful to shut down only the ones running for the server you are upgrading.

### Upgrading the operating system

To see a list of operating system versions that are supported by Rational Synergy Release 7.1, refer to the *Readme*. If relevant, upgrade your operating system now, after you have shut down your previous installation(s) running on the older operating system version, and before you install a new Rational Synergy release that requires a newer operating system version.

If your previous release will not run on your upgraded operating system, make sure that you have an up-to-date pack file for each of your databases. After you have upgraded the operating system and installed Rational Synergy Release 7.1,

you must unpack your databases to a new database server; follow the “Checklist for upgrading to a new server” on page 36.

## Rational Synergy installation

Before installing Rational Synergy Release 7.1, make sure your environment satisfies all the conditions described in “UNIX installation requirements” on page 9. In particular, make sure you have added all the required entries to `/etc/services` file or its NIS equivalent.

### Router port number

During the installation process, you are prompted to supply the router port number. This can be any unallocated port number. If you used the Rational reserved port number of 5412 for Release 6.4, 6.5, or 7.0, and you have not shut down all the daemons for that previous release, you must choose another number for Release 7.1. If you did not use port number 5412, use this value. TCP port number 5412 is reserved for Rational by the Internet Assigned Number Authority (IANA).

### Installing Rational Synergy

**Caution** Do **not** install Rational Synergy Release 7.1 over a previous installation. You must keep your previous installation(s) (6.4, 6.5, or 7.0) available until the upgrade is complete for all servers using that installation.

Download the appropriate installation image from the Rational Synergy Support Web site, and extract it. The following examples assume you have extracted the image to `/synergy_image`.

Follow the instructions for running `ccm_install` in the *Rational Synergy Installation Guide for UNIX*, up to but excluding “Set up the Rational Synergy Environment”, **except**: Use the `-u` option and the `-s servername` option in addition to the `-x` option.



For example, if you are using the Bourne shell, the commands for running the upgrade installation procedure might be as follows:

```
root# mkdir /usr/local/ccm71
root# chown ccm_root:ccm_root /usr/local/ccm71
root# chmod 755 /usr/local/ccm71
root# CCM_HOME=/usr/local/ccm71; export CCM_HOME
root# PATH=$CCM_HOME/bin:$PATH; export PATH
root# cd /usr/local/ccm71
root# /synergy_image/ccm/unix/bin/ccm_install -x -u -s
servername
```

where:

-x extracts the software from the installation image.

-u automatically copies configuration files from a previous installation, as explained in “How the installation handles configuration, platform values, and remote execution files” on page 23. The `ccm_install` program will prompt you to enter the path of the Rational Synergy 6.4, 6.5, or 7.0 installation. If you enter an invalid directory, an error message is displayed, and you will exit the `ccm_install` program.

-s *servername* upgrades the Informix database server from the old installation. To upgrade the database server, you must use this option even if the database server uses the default name (the name of the machine). Note that the -s *servername* option should not be used by users running on Oracle.

**Note** For more details about the `ccm_install` command, refer to the *Rational Synergy Administration Guide for UNIX*,

### ***How the installation handles configuration, platform values, and remote execution files***

When you install the software using the procedures described above, the Rational Synergy installation program checks the configuration files in your previous installation directory. The following actions are taken as a result of this check:

- Rational Synergy Release 7.1 is installed to a separate directory.
- For users running on Informix, the installer copies the previous database server configuration files, thus making the previous server available under Release 7.1.
- The installer copies commonly modified files (such as `ccm.ini`) from the previous installation to the new one.
- The installer tells you which files must be merged:

- If a given configuration file in your previous installation directory is still valid for Release 7.1, it is automatically used in the Release 7.1 installation directory.
- If a given configuration file in your previous installation directory is no longer valid for Release 7.1, it is copied to the Release 7.1 installation directory. However, it is given a different name. This new name is descriptive and is displayed by the installation program when you install Rational Synergy. If you modified any of these files in your old release and you want to keep the changes, simply merge your changed files with the new Release 7.1 configuration files.

Following is the list of configuration files that are handled as described above (paths are relative to the Rational Synergy installation directory):

```
etc/Ccm
etc/ccinit
etc/ccm.ini
etc/remexec.cfg
```

## Post-installation

This section explains what you need to do after you have installed Rational Synergy Release 7.1.

### Setting up the Rational Synergy environment

1. Update the X application defaults files for Rational Synergy.

On all machines that run interfaces (clients), you must copy the Ccm file to the X defaults directory (even if you have already done so for a previous Rational Synergy release):

- a. For Sun™ OpenWindows™ platforms:

```
root# cp $CCM_HOME/etc/Ccm /usr/openwin/lib/app-defaults
```

- b. For all other platforms:

```
root# cp $CCM_HOME/etc/Ccm /usr/lib/X11/app-defaults
```

If your environment is mixed, copy the files for both OpenWindows and non-OpenWindows platforms.

2. Update environment variables for user *ccm\_root*.

If you want Rational Synergy Release 7.1 to be your new default installation, update the settings for CCM\_HOME and PATH in the appropriate login scripts: .profile, .kshrc, .login and/or .cshrc files. If you do not want to

change your defaults yet, explicitly set the environment while completing and testing the upgrade.

3. Update environment variables for user *informix*. Note that this information does not apply to users running on Oracle.

If you want Rational Synergy Release 7.1 to be your new default installation, update the settings for `CCM_HOME` and `PATH` in the appropriate login scripts: `.profile`, `.kshrc`, `.login` and/or `.cshrc` files. If you do not want to change your defaults yet, explicitly set the environment while completing and testing the upgrade.

4. Start the Rational Synergy daemons (router, esd, help server, and object registrar). The command below runs all daemons on the same machine. If you do not want to run all daemons on one machine, or if you want to run additional daemons on other machines, see the *Rational Synergy Administration Guide for UNIX*.

```
ccm_root$ ccm_start_daemons
ccm_root$ exit
```

### **Reinstalling PC integrations**

If you used a PC integrations product with your previous Rational Synergy release, you must install the appropriate integrations release on top of Release 7.1.

You do not need to reinstall PC Integrations types into any existing databases. The database upgrade process described in these *Upgrade Instructions* preserves the PC integration types.

### **Merging configuration files**

If you have not already done so, you should merge the files identified in “How the installation handles configuration, platform values, and remote execution files” on page 23.

## Verifying the installation

Verify correct installation by unpacking a test database into the directory set up for Rational Synergy databases, on the database server machine. If any of the following steps fail, contact Contacting IBM Rational Software Support as described on page 2.

To verify the installation, do the following:

1. Unpack a test database.

```
$ su - ccm_root
ccm_root$ CCM_HOME=/usr/local/ccm71; export CCM_HOME
ccm_root$ PATH=$CCM_HOME/bin:$PATH; export PATH
ccm_root$ cd ccm_databases
ccm_root$ ccmdb unpack $CCM_HOME/packfiles/training.cpk -t
testdb [-s servername]
```

2. Start a Rational Synergy session on the test database.

```
ccm_root$ cmsynergy
```

When the **Start Rational Synergy** dialog box is displayed, type the path to the test database in the **Database Path** text box, and the name of this machine in the **Engine Host** text box. Click **Start** to start the session.

The installation is complete when the session(s) start. Stop the sessions by clicking on the close icon in the top right of the Rational Synergy client window, or by using the **Task > Exit** menu item.

## Upgrade databases to Rational Synergy Release 7.1

This section explains how to upgrade your Rational Synergy databases to Rational Synergy Release 7.1 when using the procedure “Upgrading an Existing Server.”

### Database upgrade requirements

Before you can use your Release 6.4, 6.5, or 7.0 databases with Rational Synergy Release 7.1, you must upgrade these databases. Moreover, before you upgrade these databases, you must have installed Rational Synergy Release 7.1.

This document describes how to upgrade Rational Synergy 6.4, 6.5, or 7.0 base model databases – databases that have **not** been customized via a model install from a model database. Databases customized using the **Type Definition** dialog box, or by modifying control files, etc., are still considered base model databases, and should be upgraded using these procedures.

To upgrade model databases and databases that have been customized via a model install, contact IBM Rational Software Support.

### Upgrading base model databases to 7.1

Perform the following steps for each UNIX production database to be upgraded.

1. Log on as *ccm\_root*.

```
$ su - ccm_root
```

2. Save manual customizations.

The upgrade program automatically saves your previous *pt* and *notify* directories, and your previous *migrate* rules files.

If you made changes to other database-specific configuration files, save those changes by making a backup copy of the files.

3. Run the upgrade program.

```
ccm_root$ CCM_HOME=/usr/local/ccm71; export CCM_HOME  
ccm_root$ PATH=$CCM_HOME/bin:$PATH; export PATH  
ccm_root$ ccldb upgrade database_path ... >logfile
```

The *database\_path* must be supplied as an absolute path. You can specify any number of *database\_path* paths for a list of databases to be upgraded. The upgrade program can take anywhere from a few minutes for a very small database to many hours for a very large database.

For more details about the upgrade program, see "Appendix A: The Upgrade Program" on page 69.

4. The upgrade program unprotects the databases. You should re-protect the databases, using `ccmdb protect database_path`, until you have completed the steps below and tested the result.
5. Once the database upgrade is complete, look through the *logfile* that you created in step 3 and the `ccm_upgrade.log` file created by the `ccmdb upgrade` command to locate any error messages or warnings that require further action.
6. Restore manual customizations.

If you made changes to database-specific configuration files, such as triggers, merge the changes you saved in step 2 into the converted databases.

- Caution** You must merge these files with the Release 7.1 versions, not just copy back your saved versions.

7. Save the following directories to a separate directory for future reference.

The `ccmdb upgrade` program saves selected files from your database before installing the new 7.1 files. After `ccmdb upgrade` completes for the first item on a database, save these files elsewhere to prevent them from being overwritten by future upgrades. The saved files reside under the database path.

Save the content of the following directories:

- `old_types`
- `oldbin`
- `oldpt`
- `lib/oldnotify`

Save the content of the following files:

- `lib/Unix/migrate.old`
- `lib/Windows/migrate.old`

8. Modify standard types.

If any standard types were modified in the database since the previous model install, they are automatically exported to the `database_path/old_types` directory. Compare any modified type with the corresponding Release 7.1 type as follows:

- a. Start Synergy Classic and use either the CLI or the GUI.

- b. Export the Release 7.1 type using the following command:  
`ccm typedef -export type_name -dir to_path [-force]`
- c. Compare the Release 7.1 type to the corresponding type that is in the `database_path/old_types` directory. You can do this by comparing XML files.
- d. If you need to reapply changes, start a session on the upgraded database using Release 7.1, start the **Type Definition** dialog box, and reapply the changes. Do not perform a type definition import of the standard type from a prior release into the upgraded database without examining and understanding all of the differences. In doing so, other properties of the type definition may revert to their definition from a prior release and these could be incompatible with Release 7.1.

9. Merge task attribute customizations.

Settings and possible values for some task attributes are held in the `pt` directory of your databases.

After you have used these *Upgrade Instructions* to upgrade a database from Release 6.4, 6.5, or 7.0 to Release 7.1, you have two `pt` directories under that database. To complete the upgrade, you must reapply the changes you made in your previous release to the new `database_path/pt` directory. Your previous `pt` directory was saved in `database_path/oldpt`.

**Caution** You must merge these files with the Release 7.1 versions, not just copy back your saved versions.

You must also remember to restore any changes you made to the task type, such as adding attributes to the `source_attrs` attribute.

10. Merge `notify` customizations.

After you have used these *Upgrade Instructions* to upgrade a database from Release 6.4, 6.5, or 7.0 to Release 7.1, you have two `notify` directories under that database. To complete the upgrade, you must reapply the changes you made in your previous release to the new `database_path/notify` directory. Your previous `notify` directory was saved in `database_path/oldnotify`.

**Caution** You must merge these files with the Release 7.1 versions, not just copy back your saved versions. It is very important that you do this merge if you use Rational Change, because it requires modified `notify` scripts.

**11.** Set site default settings.

If you are using settings other than the default settings for the following options, you need to specify the defaults for your site. These settings apply across all sessions for all interfaces. Edit the following entries in the `ccm.ini` file to set defaults:

```
baseline_template
baseline_template_date_format
baseline_template_repl_char
include_required_tasks
project_subdir_template
wa_path_template
```

For more information about these settings, see the *Defaults* section of the *Synergy CLI Help, Web mode*.

**12.** Upgrade DCM settings.

For complete information about upgrading a DCM database, see “Upgrading a DCM Cluster” on page 65.

Your database is now upgraded to Release 7.1.

### **Testing the database upgrade**

You have completed the upgrade to your production database. To test the result, start a Rational Synergy session and perform a number of operations. A short list of operations is given below.

If the database was manually protected after the upgrade, you must unprotect it before you can start a session. To run your tests, unprotect the database, start a session, then immediately protect the database again so that developers do not use the database until you have confirmed that it is working correctly. Repeat these steps each time you start a session for testing or for the post-upgrade actions described in the next section.

Start a Rational Synergy session on the upgraded database using the `cmsynergy` command. Test at least the following functionality in each upgraded database:

- Navigate through the explorers and **Work** pane in Rational Synergy.
- Create a new project.
- Create a task and assign it to yourself.
- Create one or more source objects in the new project.
- Check in one or more of those source objects.
- Check out one or more of the source objects you just checked in.



- Open the history of one or more of these source objects.
- Use an earlier version of one of the checked-out source objects.
- Update your project, and verify that the version you used is replaced.
- Make sure you can build your own product using your normal build scripts.
- Sync your work area with your database

See "Appendix B: Upgrade and Synergy 7.1" on page 73 for detailed information about testing the upgrade.

## Post-upgrade

This section explains in detail some things you may need to do once your upgrade is complete.

### **Installing Rational Change 5.2**

If you use Rational Change with this database, install Rational Change 5.2. Earlier releases of Rational Change are not compatible with Rational Synergy 7.1. For detailed instructions, refer to the *Rational Change Installation Guide for UNIX*.

Note that you must create or upgrade at least one database before you install Rational Change 5.2, because Rational Change requires access to a Rational Synergy database.

If you saved a modified copy of the previous `ptcli` configuration file as described in “Saving previous configuration files” on page 20, you should merge it at this time. The `ptcli` file is:

```
/usr/local/ccm71/etc/ptcli.cfg
```

### **DCM transfers after upgrade**

Rational Synergy 7.1 supports DCM transfers to and from releases 6.4 SP1, 6.5 SP2, 6.5a, 6.6a, and 7.0. Patches to these releases are required for DCM compatibility. For additional information, see the Rational Synergy *Readme* for Release 7.1 and the product README files for patches to the earlier releases.

For complete information about upgrading a DCM database, see “Upgrading a DCM Cluster” on page 65.

### **Purposes, processes, and process rules**

In Release 6.5, **process rules** replaced the objects previously known as *update templates* and *reconfigure templates*. Release 6.5 also introduced the concept of a process, which is a collection of process rules, and renamed some existing purposes. For more information, read the “Updating Scripts to Work with Rational Synergy 7.1” on page 61, the *Rational Synergy Help*, and the *Build Manager’s Guide*.

Upgrading to 7.1 creates or renames the standard purposes. If you have modified any of the standard purposes, your modified copy will be renamed, starting with a prefix “Saved”.

After the database upgrade has completed, you should examine any modified purposes and process rules, and adjust them as required. Create one or more processes with your preferred set of process rules.

**Note** Rational Synergy does not replicate processes or process rules from 7.0 to 6.4 or earlier releases, nor does it replicate reconfigure templates or update templates from 6.4 or earlier releases to 7.1. If you used DCM to centrally administer update templates in earlier releases, you will have to upgrade all 6.4 or earlier databases in the cluster to achieve the same effect with process rules in Release 7.1.

## Removing the previous installation

Once you no longer need your old release, you may use the following commands to remove it.

**Caution** Delete your old release directory only if you are sure there are no other installations sharing part of this directory, perhaps through an NFS mount from another machine. For example, in a heterogeneous installation, it is common to share the directory `$CCM_HOME/etc`.

**Note** Be sure to read Appendix B “B: Upgrade and Synergy 7.1” on page 73 to learn about additional reasons for saving your previous installation.

```
$ su -  
root# rm -rf /usr/local/ccm70  
root# exit
```

## Updating ccm symbolic link

If you have a symbolic link for the default release of Rational Synergy, and this link points to your previous release, delete it and create a link to the new release.

```
$ su -  
root# rm /usr/local/ccm  
root# ln -s /usr/local/ccm71 /usr/local/ccm  
root# exit
```

## Installing Windows clients

If needed, install Windows clients for Rational Synergy Release 7.1. You do not need to uninstall clients for previous releases, but you may do so if there is no need to access any databases still using the previous release.

For detailed instructions, see the *Rational Synergy Installation Guide for Windows*. To learn how to obtain this document, see “Rational documentation” on page 5.

## Testing Web mode

Previous examples in this document have started Rational Synergy sessions in Traditional mode. If your site will start Rational Synergy sessions in Web mode, be sure to test that with your upgraded database. The following shows how.

1. Run the `ccm monitor` command and check that the appropriate CCM server is running. If it is not, start it using the `ccm_server` command. Note the server URL shown in the output after running the `ccm monitor` command.
2. In your browser, enter `protocol://server:port/admin`, where the protocol (http or https), `server` and `port` are those in the server URL.
3. When prompted, enter the administrator password.
4. On the **Database** tab, check that the database you want to test is listed as connected to this server. If it is shown as connected to a different server, you should either use the other server, or use the Web page to change the server for the database.
5. Start a Synergy session using the server URL you have just verified:

```
cmsynergy -d database_path -s server_url
```

Note that you can tell whether a Synergy session was started in Web mode or Traditional mode by looking at the lower right corner of the Synergy Work pane.

You will see a message similar to the following if the session was started in Traditional mode:

```
User sue on database /vol/ccm_docs/ccm_docs using
server pacifica
```

You will see a message similar to the following if the session was started in Web mode:

```
User sue on database /vol/ccm_docs/ccm_docs using
server http://cmserver:8400
```

## Making databases available for use

Once you have completed the upgrade, tested the results, and performed any required post-upgrade actions, your upgrade is complete. If you protected the databases during the upgrade, test, or post-upgrade process, unprotect them now. You should let the users know the database are ready for use, but remember that users' client software must also be upgraded.

## **Troubleshooting**

If you have difficulties with a command or process, or if you receive an error message that you do not understand, do the following:

- Refer to the troubleshooting information on the IBM Rational Support site and the *Rational Synergy Administration Guide for UNIX or Rational Synergy Administration Guide for UNIX on Oracle*, as appropriate.

This site also contains Frequently Asked Questions (FAQs), technical bulletins, and a Discussion Forum.

- If you still have questions, contact Contacting IBM Rational Software Support, as explained on page 2.

## Checklist for upgrading to a new server

If you want to upgrade your databases at different times, or move some databases to new servers, use the following checklist — in the sequence shown — to install the Rational Synergy Release 7.1 software and upgrade your database(s) from a previous release.

**Note** To ensure a trouble-free installation, print a copy of this checklist, and check off each item as you work through the list.

### ***Pre-installation***

- Review the “UNIX installation requirements” (see page 9)
- “Planning your upgrade” (see page 38)
- If applicable, “Obtaining license information” (see page 38)
- “Saving the previous installation” (see page 39)
- “Backing up all databases” (see page 39)
- “Packing or dumping previous databases” (see page 40)
- In some situations, “Shutting down the previous release” (see page 41)
- If necessary, “Upgrading your operating system” (see page 43)

### ***Installation***

- Allocate a “Router port number” (see page 44)
- “Installing Rational Synergy” (see page 44)
- Read “How the installation handles configuration, platform values, and remote execution files” (see page 46)
- “Creating a database server” (see page 46)

### **Post-installation**

- “Setting up the Rational Synergy environment” (see page 47)
- If applicable, “Reinstalling PC integrations” (see page 49)
- If applicable, “Merging your configuration files” (see page 49)
- “Verifying the installation” (see page 50)

### **Database upgrade**

- Review the “Database upgrade requirements” (see page 51)
- “Unpacking or loading previous databases” (see page 51)
- “Upgrading base model databases to 7.1” (see page 52)
- “Testing the database upgrade” (see page 56)

### **Post-upgrade**

- If applicable, “Installing Rational Change 5.2” (see page 57)
- If applicable, read “DCM transfers after upgrade” (see page 57)
- Users might have to “Updating work areas” (see page 57)
- Read about “Purposes, processes, and process rules” (see page 57)
- When no longer needed, “Removing the previous installation” (see page 58)
- If applicable, “Updating ccm symbolic link” (see page 58)
- If applicable, “Installing Windows clients” (see page 59)
- “Making databases available for use” (see page 60)

### **Troubleshooting**

- If you are having problems, review “Troubleshooting” (see page 60)

## Pre-installation

This section explains what you need to do before you install the Rational Synergy software.

### **Planning your upgrade**

Before you run Rational Synergy Release 7.1 on a database, that database must have been upgraded to the 7.1 level and must contain a 7.1 model.

The UNIX server software must be installed and Informix database servers must be created by following these instructions. In addition, all Windows users must also have the 7.1 client installed. You cannot use older clients with 7.1 servers (nor vice versa). To learn how to install Windows clients, refer to the *Rational Synergy Installation Guide for Windows*.

Before starting the upgrade, decide on where the new server is to be and what its configuration is. Make a list of the databases to be moved to that new server as they are upgraded. Since those databases will be unavailable during the upgrade process, you need to notify the users of those databases and agree on a schedule.

You can move a database from Windows to UNIX by packing on Windows and unpacking on UNIX, but you must then run `ccmdb upgrade -w`. See "Appendix A: The Upgrade Program" on page 69 for more information on the upgrade command. You can move a database from UNIX to Windows by packing on UNIX and unpacking on Windows (either before or after upgrading the UNIX database).

Make sure you have all the information you need, including access to the *Readme* for Release 7.1, the *Rational Synergy Installation Guide for UNIX or the Rational Synergy Installation Guide for UNIX on Oracle*, and the *Rational Synergy Administration Guide for UNIX or Rational Synergy Administration Guide for UNIX on Oracle*, as appropriate.

You should print a copy of the "Checklist for upgrading to a new server" on page 36, to mark as you proceed.

### **Obtaining license information**

To install and run the Rational Synergy software, you need a valid IBM® Rational® License Server. For detailed information, see the Licensing Guide document on the Rational Synergy Information Center (<http://publib.boulder.ibm.com/infocenter/rsdp/v1r0m0/index.jsp>).

The Rational Directory Service (RDS) is also a prerequisite if you intend to run Synergy sessions in Web mode.



---

For updated server information, see the *Rational Directory Server Product Manual*, available on the Rational Synergy Information Center (<http://publib.boulder.ibm.com/infocenter/rsdp/v1r0m0/index.jsp>).

## **Saving the previous installation**

This section explains how to save your previous installation.

### **Backing up previous installation**

Regardless of the release from which you are upgrading, back up your previous installation.

**Caution** Backing up your previous installation is an important safeguard and should not be skipped.

To back up a previous UNIX installation:

1. Save all files in the Rational Synergy installation directory (`$CCM_HOME`).
2. Save all files in the home directories for the `ccm_root` user.
3. Save all files in the home directories for the `informix` user - Note that this information does not apply to users running on Oracle.
4. Save any system start-up and configuration files in:  
`/etc/services`  
`/etc/rc*.d`  
`/etc.init.d`  
or equivalent files.

### **Saving previous configuration files**

If you use Rational Change, save the previous `ptcli` configuration file if you have modified it. The `ptcli` file is:

```
/usr/local/ccm70/etc/ptcli.cfg
```

### **Backing up all databases**

As user `ccm_root`, use the `ccmsrv status` command to view all of your databases. Then, regardless of the release from which you are upgrading, back up each of your databases prior to the upgrade.

**Note** Copying your databases is both an important safeguard and a critical part of this upgrade process, and must not be skipped. For more information about backing up databases, refer to

the “Back Up a Database” section of the *Rational Synergy Administration Guide for UNIX* or *Rational Synergy Administration Guide for UNIX on Oracle*.

If you anticipate that the upgrade will still be running when your regular scheduled backups, builds, DCM transfers, and other background jobs are run, temporarily disable those scheduled activities. You must remember to turn them back on after the upgrade.

You may use your normal procedures for backing up your databases, but read the next section about the need for a copy of the databases. If you have a customized model database, remember to back it up as well as all your production databases.

### **Packing or dumping previous databases**

You must copy your databases from your previous release into a Rational Synergy 7.1 server. Use `ccmdb backup` (or `ccmdb pack`) and `ccmdb unpack`. If your normal backup procedure is to use `ccmsrv archive` or some other method, you **must** use `ccmdb backup`, `ccmdb pack`, or `ccmdb dump` instead of or in addition to your normal backup procedures.

If a database is too large to be packed, you must back up the metadata and file system separately. Back up the metadata using `ccmdb dump`; note that `ccmsrv archive` is not suitable for this purpose. Back up the file system portion of the database using any appropriate tool. Note that this step should be performed using your previous release.

1. Start a command window with the path set to your previous installation.  
**Start > All Programs > Telelogic > Telelogic Lifecycle Solutions Tools > Telelogic Synergy 7.0 > CM command prompt**

2. Copy the database directory using a tool of your choice.

```
ccm_root$ CCM_HOME=/usr/local/ccm70; export CCM_HOME
ccm_root$ PATH=$CCM_HOME/bin:$PATH; export PATH
ccm_root$ cd database_path
ccm_root$ tar -cf backup_file .
```

3. Dump the metadata.

```
ccm_root$ ccmdb dump database_path -t dumpfile
```

## Shutting down the previous release

In most cases, you need not shut down your previous release(s) of Rational Synergy before installing Release 7.1. You must shut down your previous release only if you must delete and replace your existing Informix database server instead of creating an entirely new and separate Informix database server (not recommended). Note that this information does not apply to users running on Oracle.

**Note** Before you delete a previous installation, be sure to read "Appendix B: Upgrade and Synergy 7.1" on page 73.

To shut down a previous release, perform the following steps:

1. Shut down all sessions running on the old installation directory. As user *ccm\_root*, run the `ccmdb shutdown` command on each active database.

```
$ su - ccm_root
ccm_root$ CCM_HOME=/usr/local/ccm70; export CCM_HOME
ccm_root$ PATH=$CCM_HOME/bin:$PATH; export PATH
ccm_root$ ccmdb shutdown database_path (for each database)
```

2. Still as user *ccm\_root*, stop the Rational Synergy daemons running on this server. If this server is the only server still running the earlier releases, you should shut down all daemons:

```
ccm_root$ ccm_stop_daemons
ccm_root$ exit
```

If there are other servers still running on the same earlier release, you should shut down only the object registrar and ESD processes running on this server. Use `ccm monitor` to view a list of CM processes, and kill the object registrars and ESD processes running on this server.

**Caution** There could be object registrars and ESD processes from multiple servers running on the same machine; be careful to shut down only the ones running for the server you are upgrading.

## Deleting the previous Informix database server

If you have shut down your previous release, and you want to reuse the disk space used by your previous Informix database server, you must first delete the previous server. Note that the information in this section does not apply to users running on Oracle.

**Caution** Do not delete your previous Informix database server until you are sure you have good backups.

To delete your previous server:

1. Make sure that you have a successful backup of all your databases.
2. Log on as *ccm\_root* on the database server machine.  

```
$ su - ccm_root
```
3. Point to your old installation directory.

```
informix$ CCM_HOME=/usr/local/ccm70; export CCM_HOME
informix$ PATH=$CCM_HOME/bin:$PATH; export PATH
```

4. Get a list of databases.  

```
informix$ ccmsrv status [-s servername]
```
5. Remove each database.  

```
informix$ ccldb delete database_path
```
6. Log on as user *informix* on the database server machine.  

```
$ su - informix
```

7. Point to your old installation directory.  

```
informix$ CCM_HOME=/usr/local/ccm70; export CCM_HOME
informix$ PATH=$CCM_HOME/bin:$PATH; export PATH
```

8. Delete the old Informix database server.  

```
informix$ ccmsrv delete -s servername
```
9. Exit from user *informix*.  

```
informix$ exit
```

## Removing the previous installation

If you no longer need your old release, you can use the following commands to remove it.

**Caution** Delete your old release directory only if you are sure there are no other installations sharing part of this directory, perhaps through an NFS mount from another machine. For example, in heterogeneous installation, it is common to share the directory `$CCM_HOME/etc`.

**Note** Be sure to read Appendix “B: Upgrade and Synergy 7.1” on page 73 to learn about additional reasons for saving your previous installation.

```
$ su -  
root# rm -rf /usr/local/ccm70  
root# exit
```

## Upgrading your operating system

To see a list of operating system versions that are supported by Rational Synergy Release 7.1, refer to the *Readme*.

If relevant, upgrade your operating system now, after you have shut down your previous installation(s) running on the older operating system version, and before you install a new Rational Synergy release that requires a newer operating system version.

Alternatively, set up a new machine with the newer operating system, and upgrade to Rational Synergy Release 7.1 on that system following this checklist.

## Rational Synergy installation

Before installing Rational Synergy Release 7.1, make sure your environment satisfies all the conditions described in “UNIX installation requirements” on page 9. In particular, make sure you have added all the required entries to `/etc/services` file or its NIS equivalent.

### **Router port number**

During the installation process, you are prompted to supply the router port number. This can be any unallocated port number. If you used the Rational reserved port number of 5412 for Release 6.4, 6.5, or 7.0, and you have not shut down all the daemons for that previous release, you must choose another number for Release 7.1. If you did not use port number 5412, use this value now. TCP port number 5412 is reserved for Rational by the Internet Assigned Number Authority (IANA).

### **Installing Rational Synergy**

**Caution** Do **not** install Rational Synergy Release 7.1 over a previous installation. Use a separate installation directory for each release, or uninstall the older release first, as described earlier in this checklist.

Download the appropriate installation image from the Rational Synergy Support Web site, and extract it. The following examples assume you have extracted the image to `/synergy_image`.

Follow the instructions for running `ccm_install` in the *Rational Synergy Installation Guide for UNIX*, up to but excluding “Set up the Rational Synergy Environment”, **except**: If the installation directory for the previous release of Synergy is visible from this machine, use the `-u` option in addition to the `-x` option.

For example, if you are using the Bourne shell, the commands for running the upgrade installation procedure might be as follows:

```
root# mkdir /usr/local/ccm71
root# chown ccm_root:ccm_root /usr/local/ccm71
root# chmod 755 /usr/local/ccm71
root# CCM_HOME=/usr/local/ccm71; export CCM_HOME
root# PATH=$CCM_HOME/bin:$PATH; export PATH
root# cd /usr/local/ccm71
root# /synergy_image/ccm/unix/bin/ccm_install -x -u
```

where:

-x extracts the software from the installation image.

-u automatically copies configuration files from a previous installation, as explained in “How the installation handles configuration, platform values, and remote execution files” on page 46. The `ccm_install` program will prompt you to enter the path of the Rational Synergy 6.4, 6.5, or 7.0 installation. If you enter an invalid directory, an error message is displayed, and you will exit the `ccm_install` program.

**Note** For more details about the `ccm_install` command, refer to the *Rational Synergy Administration Guide for UNIX*.

## **How the installation handles configuration, platform values, and remote execution files**

If your previous installation is not visible from this machine, you cannot use the `-u` option. Instead, you must merge the configuration files manually with those you saved. See “Backing up previous installation” on page 39 and “Saving previous configuration files” on page 39.

If your previous installation is visible from this machine, when you install the software using the procedures described above the Rational Synergy installation program checks the configuration files in your previous installation directory. The following actions are taken as a result of this check:

- Rational Synergy Release 7.1 is installed to a separate directory.
- If a previous installation directory is visible, and the `ccm_install -u` option is used, the installer copies commonly modified files (such as `ccm.ini`) from the previous installation to the new one.
- The installer tells you which files must be merged:
  - If a given configuration file in your previous installation directory is still valid for Release 7.1, it is automatically used in the Release 7.1 installation directory.
  - If a given configuration file in your previous installation directory is no longer valid for Release 7.1, it is copied to the Release 7.1 installation directory. However, it is given a different name. This new name is descriptive and is displayed by the installation program when you install Rational Synergy. If you modified any of these files in your old release and you want to keep the changes, simply merge your changed files with the new Release 7.1 configuration files.

Following is the list of configuration files that are handled as described above (paths are relative to the Rational Synergy installation directory):

```
etc/Ccm
etc/ccminit
etc/ccm.ini
etc/remexec.cfg
```

## **Creating a database server**

Except where noted, you must perform the following steps on each machine that will host a database server for Release 7.1.

Oracle users should read the section “Prepare the Oracle Database” in the *Rational Synergy Installation Guide for UNIX on Oracle* and verify that the items listed in that section have been performed before proceeding.



1. Create database server shared library links.

The database server requires symbolic links set up to point from `/usr/lib` to its shared libraries. The `ccm_install` command you ran while installing the new release creates these links only if the command is running on the same machine type as the binaries you are installing (and even then it only creates links on the installation machine). You must physically run `ccm_install -l` on each database server and engine server machine.

```
$ su -
root# CCM_HOME=/usr/local/ccm71; export CCM_HOME
root# PATH=$CCM_HOME/bin:$PATH:/usr/ucb; export PATH
root# cd $CCM_HOME
root# $CCM_HOME/bin/ccm_install -l
```

2. Create the database server. Note that this information does not apply to users running on Oracle.

Create your new server using newly allocated disk space, or if you deleted your previous Informix database server, you may reuse its allocated space.

Create a new database server by following the instructions in the *Rational Synergy Installation Guide for UNIX*. Additionally, read the appropriate *Rational Synergy Administration Guide for UNIX* before creating a database server. To learn how to obtain these documents, see “Rational documentation” on page 5.

## Post-installation

This section explains what you need to do after you have installed Rational Synergy Release 7.1.

### Setting up the Rational Synergy environment

1. Update the X application defaults files for Rational Synergy.

On all machines that run interfaces (clients), you must copy the `Ccm` file to the X defaults directory (even if you have already done so for a previous Rational Synergy release):

- a. For Sun OpenWindows platforms:

```
root# cp $CCM_HOME/etc/Ccm /usr/openwin/lib/app-defaults
```

- b. For all other platforms:

```
root# cp $CCM_HOME/etc/Ccm /usr/lib/X11/app-defaults
```

If your environment is mixed, copy the files for both OpenWindows and non-OpenWindows platforms.

2. Update environment variables for user *ccm\_root*.

If you want Rational Synergy Release 7.1 to be your new default installation, update the settings for CCM\_HOME and PATH in the appropriate login scripts: `.profile`, `.kshrc`, `.login` and/or `.cshrc` files. If you do not want to change your defaults yet, explicitly set the environment while completing and testing the upgrade.

3. Update environment variables for user *informix*. Note that this information does not apply to users running on Oracle.

If you want Rational Synergy Release 7.1 to be your new default installation, update the settings for CCM\_HOME and PATH in the appropriate login scripts: `.profile`, `.kshrc`, `.login` and/or `.cshrc` files. If you do not want to change your defaults yet, explicitly set the environment while completing and testing the upgrade.

4. Start the Rational Synergy daemons (router, esd, help server, and object registrar). The command below runs all daemons on the same machine. If you do not want to run all daemons on one machine, or if you want to run additional daemons on other machines, see the *Rational Synergy Administration Guide for UNIX*.

```
ccm_root$ ccm_start_daemons
```

5. Start the object registrar on other database server machines.

If the database server was not the machine where you ran the `ccm_start_daemons` command, you must run an object registrar on the database server machine. Log on as `ccm_root`, set the required environment if you have not yet changed the startup scripts for `ccm_root`, and then run the `ccm_objreg` command:

```
root# su - ccm_root
ccm_root$ CCM_HOME=/usr/local//usr/local/ccm71; export CCM_HOME
ccm_root$ PATH=$CCM_HOME/bin:$PATH:/usr/ucb; export PATH
ccm_root$ ccm_objreg
ccm_root$ exit
```

### **Reinstalling PC integrations**

If you used a PC integrations product with your previous Rational Synergy release, you must install the appropriate integrations release on top of Release 7.1.

You do not need to reinstall PC Integrations types into any existing databases. The database upgrade process described in these *Upgrade Instructions* preserves the PC integration types.

### **Merging your configuration files**

If you have not already done so, you should merge the files identified in “How the installation handles configuration, platform values, and remote execution files” on page 46.

## Verifying the installation

Verify correct installation by unpacking a test database into the directory set up for Rational Synergy databases, on the database server machine. If any of the following steps fail, contact Contacting IBM Rational Software Support as described on page 2.

To verify the installation, do the following:

1. Unpack a test database.

```
$ su - ccm_root
ccm_root$ CCM_HOME=/usr/local/ccm71; export CCM_HOME
ccm_root$ PATH=$CCM_HOME/bin:$PATH; export PATH
ccm_root$ cd ccm_databases
ccm_root$ ccmdb unpack $CCM_HOME/packfiles/training.cpk -t
testdb [-s servername]
```

2. Start a Rational Synergy session on the test database.

```
ccm_root$ cmsynergy
```

When the **Start Rational Synergy** dialog box is displayed, type the path to the test database in the **Database Path** text box, and the name of this machine in the **Engine Host** text box. Click **Start** to start the session.

The installation is complete when the session(s) start. Stop the sessions by clicking on the close icon in the top right of the Rational Synergy client window, or by using the **Task > Exit** menu item.

## Upgrade databases to Rational Synergy Release 7.1

This section explains how to upgrade your Rational Synergy databases to Rational Synergy Release 7.1 when using the procedure “Upgrade to a New Server.”

### **Database upgrade requirements**

Before you can use your Release 6.4, 6.5, or 7.0 databases with Rational Synergy Release 7.1, you must upgrade these databases. Moreover, before you upgrade these databases, you must have installed Rational Synergy Release 7.1.

This document describes how to upgrade Rational Synergy 6.4, 6.5, or 7.0 base model databases – databases that have **not** been customized via a model install from a model database. Databases customized using the **Type Definition** dialog box, or by modifying control files, etc., are still considered base model databases, and should be upgraded using these procedures.

To upgrade model databases and databases that have been customized via a model install, contact IBM Rational Software Support.

### **Unpacking or loading previous databases**

If you followed the instructions in “Creating a database server” on page 46, your new server is empty and ready for use. To prepare your databases for upgrade, do one of the following for each database that you are upgrading:

#### **Unpacking previous database**

If you used `ccmdb backup` or `ccmdb pack` to pack your database from the previous release, unpack it into this new server using Release 7.1:

```
ccm_root$ CCM_HOME=/usr/local/ccm71; export CCM_HOME
ccm_root$ PATH=$CCM_HOME/bin:$PATH; export PATH
ccm_root$ ccmdb unpack packfile -to database_path [-s server]
```

If the pack file came from a Windows server, you must use the `-w` option with `ccmdb upgrade`, as described in “Upgrading base model databases to 7.1” on page 52.

## Loading previous database

If you dumped the metadata for your database, and copied the file system portion manually as described in “Packing or dumping previous databases” on page 40, then you need to reconstruct the database in your new Release 7.1 server. The following example assumes you used the `tar` utility to back up and copy the file system portions of your database:

```
ccm_root$ CCM_HOME=/usr/local/ccm71; export CCM_HOME
ccm_root$ PATH=$CCM_HOME/bin:$PATH; export PATH
ccm_root$ ccmdb load dumpfile -to database_path [-s server]
ccm_root$ cd database_path
ccm_root$ mv db db.SAVE
ccm_root$ $CCM_HOME/bin/util/bsdtar xf backup_file
ccm_root$ mv db db.old
ccm_root$ mv db.SAVE db
ccm_root$ cp db.old/MDL_INFO db
```

If the dump file came from a Windows server, you must use the `-w` option with `ccmdb upgrade`, as described in the next section.

## Upgrading base model databases to 7.1

Perform the following steps for each UNIX production database to be upgraded.

1. Log on as `ccm_root`.

```
$ su - ccm_root
```

2. Save manual customizations.

The upgrade program automatically saves your previous `pt` and `notify` directories, and your previous migrate rules files.

If you made changes to other database-specific configuration files, save those changes by making a backup copy of the files.

3. Run the upgrade program.

```
ccm_root$ CCM_HOME=/usr/local/ccm71; export CCM_HOME
ccm_root$ PATH=$CCM_HOME/bin:$PATH; export PATH
ccm_root$ ccmdb upgrade [-w] database_path ... >logfile
```

The `database_path` must be supplied as an absolute path. You can specify any number of `database_path` paths for a list of databases to be upgraded. The upgrade program can take anywhere from a few minutes for a very small database to many hours for a very large database.

Note that you can unpack a Windows database on a UNIX installation. The `ccmdb unpack` command on UNIX can read pack files created on a Windows system. The resulting database may have Windows-style ASCII

data in important files which should be updated. The command `ccmdb upgrade` has an option, `-w`, which converts the database's files in addition to performing the upgrade. All database configuration files and controlled files of type `ascii` or its subtypes will be examined and converted to UNIX ASCII format. The conversion affects controlled files in the archive and cache only; as no workareas are updated.

**Caution** Because this operation changes the contents of static, archived files, it should be used with caution. Always retain the original database backup in case any problems are discovered.

For more details about the upgrade program, see "Appendix A: The Upgrade Program" on page 69.

4. The upgrade program unprotects the databases. You should re-protect the databases, using `ccmdb protect database_path`, until you have completed the steps below and tested the result.
5. Once the database upgrade is complete, look through the *logfile* that you created in step 3 and the `ccm_upgrade.log` file created by the `ccmdb upgrade` command to locate any error or warning messages that require further action.
6. Restore manual customizations.

If you made changes to database-specific configuration files, such as triggers, merge the changes you saved in step 2 into the converted databases.

**Caution** You must merge these files with the Release 7.1 versions, not just copy back your saved versions.

7. Save the following directories to a separate directory for future reference.

The `ccmdb upgrade` program saves selected files from your database before installing the new 7.1 files. After `ccmdb upgrade` completes for the first item on a database, save these files elsewhere to prevent them from being overwritten by future upgrades. The saved files reside under the database path.

Save the content of the following directories:

- `old_types`
- `oldbin`
- `oldpt`
- `lib/oldnotify`

Save the content of the following files:

- lib/Unix/migrate.old
- lib/Windows/migrate.old

8. Modify standard types.

If any standard types were modified in the database since the previous model install, they are automatically exported to the `database_path/old_types` directory. Compare any modified type with the corresponding Release 7.1 type as follows:

- a. Start Synergy Classic and use either the CLI or the GUI.
- b. Export the Release 7.1 type using the following command:  
`ccm typedef -export type_name -dir to_path [-force]`
- c. Compare the Release 7.1 type to the corresponding type that is in the `database_path/old_types` directory. You can do this by comparing XML files.
- d. If you need to reapply changes, start a session on the upgraded database using Release 7.1, start the **Type Definition** dialog box and reapply the changes. Do not perform a type definition import of the standard type from a prior release into the upgraded database without examining and understanding all of the differences. In doing so, other properties of the type definition may revert to their definition from a prior release and these could be incompatible with Release 7.1.

9. Merge Task Attribute customizations.

Settings and possible values for some task attributes are held in the `pt` directory of your databases.

After you have used these *Upgrade Instructions* to upgrade a database from Release 6.4, 6.5, or 7.0 to Release 7.1, you have two `pt` directories under that database. To complete the upgrade, you must reapply the changes you made in your previous release to the new `database_path/pt` directory. Your previous `pt` directory was saved in `database_path/oldpt`.

**Caution** You must merge these files with the Release 7.1 versions, not just copy back your saved versions.

You must also remember to restore any changes you made to the task type, such as adding attributes to the `source_attrs` attribute.



**10.** Merge notify customizations.

After you have used these *Upgrade Instructions* to upgrade a database from Release 6.4, 6.5, or 7.0 to Release 7.1, you have two notify directories under that database. To complete the upgrade, you must reapply the changes you made in your previous release to the new `database_path/notify` directory. Your previous notify directory was saved in `database_path/oldnotify`.

**Caution** You must merge these files with the Release 7.1 versions, not just copy back your saved versions. It is very important that you do this merge if you use Rational Change, because it requires modified notify scripts.

**11.** Set site default settings.

If you are using settings other than the default settings for the following options, you need to specify the defaults for your site. These settings apply across all sessions for all interfaces. Edit the following entries in the `ccm.ini` file to set defaults:

```
baseline_template
baseline_template_date_format
baseline_template_repl_char
include_required_tasks
project_subdir_template
wa_path_template
```

For more information about these settings, see the *Defaults* section of the *Synergy CLI Help, Web mode*.

**12.** Upgrade DCM settings.

For complete information about upgrading a DCM database, see “Upgrading a DCM Cluster” on page 65.

Your database is now upgraded to Release 7.1.

### **Testing the database upgrade**

You have completed the upgrade to your production database. To test the result, start a Rational Synergy session and perform a number of operations. A short list of operations is given below.

If the database was manually protected after the upgrade, you must unprotect it before you can start a session. To run your tests, unprotect the database, start up a session, then immediately protect the database again so that developers do not start to use the database until you have confirmed that it is working correctly. Repeat these steps each time you start a session for testing or for the post-upgrade actions described in the next section.

Start a Rational Synergy session on the upgraded database using the `cmsynergy` command. Test at least the following functionality in each upgraded database:

- Navigate through the explorers and **Work** pane in Rational Synergy.
- Create a new project.
- Create a task and assign it to yourself.
- Create one or more source objects in the new project.
- Check in one or more of those source objects.
- Check out one or more of the source objects you just checked in.
- View the history of one or more of these source objects.
- Use an earlier version of one of the checked-out source objects.
- Update your project, and verify that the version you used is replaced.
- Make sure you can build your own product using your normal build scripts.
- Sync your work area with your database.

See "Appendix B: Upgrade and Synergy 7.1" on page 73 for detailed information about testing the upgrade.

---

## Post-upgrade

This section explains in detail some things you may need to do once your upgrade is complete.

### **Installing Rational Change 5.2**

If you use Rational Change with this database, install Rational Change 5.2. Earlier releases of Rational Change are not compatible with Rational Synergy 7.1. For detailed instructions, refer to the *Rational Change Installation Guide for UNIX*.

Note that you must create or upgrade at least one database before you install Rational Change 5.2, because Rational Change requires access to a Rational Synergy database.

If you use Rational Change, and if you saved a modified copy of the previous `ptcli` configuration file as described in “Saving previous configuration files” on page 39, you should merge it at this time. The `ptcli` file is:

```
/usr/local/ccm71/etc/ptcli.cfg
```

### **DCM transfers after upgrade**

Rational Synergy 7.1 supports DCM transfers to and from releases 6.4 SP1, 6.5 SP2, 6.5a, 6.6a, and 7.0. Patches to these releases are required for DCM compatibility. For additional information, see the Rational Synergy *Readme* for Release 7.1 and the product README files for patches to the earlier releases.

For complete information about upgrading a DCM database, see “Upgrading a DCM Cluster” on page 65.

### **Updating work areas**

If you moved the database to a new path (perhaps on a new machine) as part of the upgrade, existing work areas must be updated to refer to the new path. This is true for both copy-based and link-based work areas. Each user of a moved database must run the command to update their working projects:

```
$ ccm wa -dbpath old_database_path
```

Build managers must also update their *prep* projects, and may need to update shared or static projects, using the appropriate `-scope` options to the `ccm wa -dbpath` command.

### **Purposes, processes, and process rules**

In Release 6.5, **process rules** replaced the objects previously known as *update templates* and *reconfigure templates*. Release 6.5 also introduced the concept of a

**process**, which is a collection of process rules, and renamed some existing **purposes**. For more information, read the "Updating Scripts to Work with Rational Synergy 7.1" on page 61, the *Rational Synergy Help*, and the *Build Manager's Guide*.

Upgrading to 7.1 creates or renames the standard purposes. If you have modified any of the standard purposes, your modified copy will be renamed, starting with a prefix "Saved".

After the database upgrade has completed, you should examine any modified purposes and process rules, and adjust them as required. Create one or more processes with your preferred set of process rules.

**Note** Rational Synergy does not replicate processes or process rules from 6.5 to earlier releases, nor does it replicate reconfigure templates or update templates from earlier releases to 7.1. If you used DCM to centrally administer update templates in earlier releases, you will have to upgrade all databases in the cluster to achieve the same effect with process rules in Release 7.1.

### Removing the previous installation

Once you no longer need your old release, you may use the following commands to remove it.

**Caution** Delete your old release directory only if you are sure there are no other installations sharing part of this directory, perhaps through an NFS mount from another machine. For example, in heterogeneous installation, it is common to share the directory `$CCM_HOME/etc`.

**Note** Be sure to read Appendix B "B: Upgrade and Synergy 7.1" on page 73 to learn about additional reasons for saving your previous installation.

```
$ su -  
root# rm -rf /usr/local/ccm70  
root# exit
```

### Updating ccm symbolic link

When you want to change the default version of Rational Synergy, delete any symbolic link to a previous release and create a link to the new release.

```
$ su -  
root# rm /usr/local/ccm
```

```
root# ln -s /usr/local/ccm71 /usr/local/ccm
root# exit
```

## Installing Windows clients

If needed, install Windows clients for Rational Synergy Release 7.1. You do not need to uninstall clients for previous releases, but you may do so if there is no need to access any databases still using the previous release.

For detailed instructions, see the *Rational Synergy Installation Guide for Windows*. To learn how to obtain this document, see “Rational documentation” on page 5.

## Testing Web mode

Previous examples in this document have started Rational Synergy sessions in Traditional mode. If your site will start Rational Synergy sessions in Web mode, be sure to test that with your upgraded database. The following shows how.

1. Run the `ccm monitor` command and check that the appropriate CCM server is running. If it is not, start it using the `ccm_server` command. Note the server URL shown in the output after running the `ccm monitor` command.
2. In your browser, enter `protocol://server:port/admin`, where the protocol (http or https), `server` and `port` are those in the server URL.
3. When prompted, enter the administrator password.
4. On the **Database** tab, check that the database you want to test is listed as connected to this server. If it is shown as connected to a different server, you should either use the other server, or use the Web page to change the server for the database.
5. Start a Synergy session using the server URL you have just verified:

```
cmsynergy -d database_path -s server_url
```

Note that you can tell whether a Synergy session was started in Web mode or Traditional mode by looking at the lower right corner of the Synergy Work pane.

You will see a message similar to the following if the session was started in Traditional mode:

```
User sue on database /vol/ccm_docs/ccm_docs using
server pacifica
```

You will see a message similar to the following if the session was started in Web mode:

```
User sue on database /vol/ccm_docs/ccm_docs using
server http://cmserver:8400
```

## **Troubleshooting**

If you have difficulties with a command or process, or if you receive an error message that you do not understand, do the following:

- Refer to the troubleshooting information on the IBM Rational Support site and the *Rational Synergy Administration Guide for UNIX or Rational Synergy Administration Guide for UNIX on Oracle*, as appropriate.

These and other documents are available on the Rational Synergy Info Center

(<http://publib.boulder.ibm.com/infocenter/rsdp/v1r0m0/index.jsp>).

- If you still have questions, contact Contacting IBM Rational Software Support, as explained on page 2.

## **Making databases available for use**

Once you have completed the upgrade, tested the results, and performed any required post-upgrade actions, your upgrade is complete. If you protected the databases during the upgrade, test, or post-upgrade process, unprotect them now. You should let the users know the database are ready for use, but remember that users' client software must also be upgraded.

# 5

## Updating Scripts to Work with Rational Synergy 7.1

### Introduction

If you have written or used scripts with prior releases of Rational Synergy, you should review the following sections for possible changes required for those scripts. When reviewing your scripts, make them as portable as possible to minimize any changes that might be required in a future release. Rational strives to make the CLI upward-compatible with each release of Rational Synergy. However, this is not always possible when major new features or capabilities are provided in the new release.

### New features

Rational Synergy 7.0 introduced a new CLI for use with Web mode. The new CLI is referred to as the Synergy CLI, and the CLI from previous releases is now referred to as the Classic CLI. For more information on the Synergy CLI and Web mode, see the *Release 7.0 Readme*. If you are interested in porting your existing scripts to use the Synergy CLI rather than the Classic CLI, check the Rational Synergy Support site for additional information.

The Classic CLI was extended in Rational Synergy 7.1, but existing commands were not changed. Therefore, when upgrading from 6.5 or 7.0 to 7.1, your scripts should not need significant changes. Even if your scripts do not require changes, you should be sure to test them carefully with 7.1.

If you are upgrading from Release 6.4, Rational Synergy Release 6.5 introduced new commands, new command options, and new query functions and keywords. While it is not always necessary to update your scripts to take advantage of these new features, doing so may make your scripts simpler, easier to maintain, and faster. Review the *Readme* for a description of new features in 6.5.

### Changes to existing scripts

The following topics are discussed in this section:

- “Project purpose name changes” on page 62
- “Process rules and reconfigure/update templates” on page 62

## Project purpose name changes

In Release 6.5, **project purposes** were renamed, as shown in the table below. Additionally, in Release 7.0, the name *project purposes* was changed to *purposes*. You should update your scripts to use the new purpose names.

| Old Purpose Name   | New Purpose Name           |
|--------------------|----------------------------|
| Custom             | Custom Development         |
| Shared             | Shared Development         |
| Visible            | Visible Development        |
| Master Integration | Master Integration Testing |

If a script creates a new release specifying a set of purposes, the script must at the minimum be updated to use the correct new names. You should consider changing these scripts to specify the **process** for the new release. A process defines a set of process rules, which replaces the objects previously known as reconfigure templates or update templates. For more information on processes and process rules, see the *ReadMe* and the *Build Manager's Guide*.

## Process rules and reconfigure/update templates

In Release 6.5, **process rules** replaced the objects previously known as update templates. The commands `ccm update_template`, `ccm update_temp`, and `ccm ut` from 6.4 are still available, but they are now aliases to the preferred form of the command: `ccm process_rule` or `ccm pr`. You should update your scripts to use the new form of the command.

The combination of release and purpose no longer forms a unique identifier for process rules, so the old form of reconfigure template or update template specifiers `release:purpose` is not used in the **ccm process\_rule** command. You must update your scripts to use the new form of *process\_rule\_spec*. For more information, see the *Rational Synergy CLI Help, Web mode*.

Process rules no longer support direct task members; you must enclose all tasks with folders or folder templates. For this reason, the following command forms are no longer supported, and you must remove them from your scripts:

```
ccm project_grouping -show individual_tasks
ccm update_template -tasks [-y] [-related] (and all its aliases)
ccm update_template -show tasks (and all its aliases)
```

The `-copy` option may no longer be used to create process rules, but only lets you copy over an existing process rule, and no longer accepts the `-force` option.



Process rules no longer have a DCM transfer option (they are always allowed to be transferred), and so the following command forms are no longer supported:

```
ccm update_template -allow_dcm_transfer  
ccm update_template -noallow_dcm_transfer  
ccm update_template -show allow_dcm_transfer
```



# 6

## Upgrading a DCM Cluster

### Introduction

This chapter describes additional upgrade considerations when upgrading one or more databases that participate in a DCM cluster. If you are not using DCM or are upgrading a database that is not initialized for DCM, then you may skip this chapter.

Note that in Release 7.0, the product name Distributed CM was changed and is now Rational Synergy Distributed. The product abbreviation remains DCM.

### Compatibility with prior releases of Rational Synergy

Rational Synergy 7.1 supports DCM transfers to and from releases 6.4 SP1, 6.5 SP2, 6.5a, 6.6a, and 7.0. Patches to these releases are required for DCM compatibility. For additional information, see the Rational Synergy *Readme* for Release 7.1 and the product README files for patches to the earlier releases.

With these patches, DCM in Rational Synergy Release 7.1 is compatible with Rational Synergy Releases 6.4 and 6.5. If you want to exchange data with releases prior to 6.4, you must do so through an intermediate database.

In general, when a transfer package is generated from a Rational Synergy Release 7.1 database, not all data and information may be processed in earlier releases. The additional data will be ignored by prior releases. However, that will also mean that only a subset of the data will be represented in prior releases and not all of the 7.1 features and benefits may necessarily apply across a DCM cluster when some databases are at prior releases. To gain full benefit from Release 7.1, all of the databases in a DCM cluster should be upgraded to 7.1.

Note that Rational Synergy does not replicate processes or process rules from 7.1 to 6.4, nor does it replicate reconfigure templates or update templates from Release 6.4. If you used DCM to centrally administer update templates in earlier releases, you will have to upgrade all databases in the cluster to achieve the same effect with process rules in Release 7.1.

### Order of upgrading a DCM cluster

To get the full benefit of the new functionality in Rational Synergy Release 7.1, all databases in the DCM cluster should be updated before resuming DCM operations and regular usage. However, when these databases are located at different sites or when a large number of databases are in the cluster, it may not be

practical to upgrade them all at one time. There may thus be some time when some of the cluster has been upgraded to 7.1 and some is at one or more prior releases.

There are several factors that determine the order in which sites and/or databases should be upgraded:

- Hub databases should be updated before the spoke databases that exchange data with them. After a hub database is updated, as each spoke database is upgraded, it will be able to fully use the new facilities in Release 7.1. Conversely, if two Release 7.1 databases share data via a pre-7.1 hub database, all three databases will be constrained by the reduced functionality of the hub database.
- In Master and Satellite DCM methodology, the master database is where master builds are performed and applications are released. It is preferable to update the master database first, though the satellites must also be upgraded before process rules can be shared, as noted in “Replicating releases, templates and process rules” on page 67.

## Steps to perform after upgrading a database in a DCM cluster

The following sections describe the steps to be completed after you upgrade a database in a DCM cluster.

- “DCM database definitions in the upgraded database” on page 66
- “DCM database definition for this database in other databases” on page 67
- “Replicating releases, templates and process rules” on page 67

### **DCM database definitions in the upgraded database**

After a database has been upgraded, you should review the DCM database definitions in the upgraded database and establish which Rational Synergy release it is currently using.

Release 7.1 does not support the old CCM45SP2 export format. Existing database definitions that used the CCM45SP2 format will have the *generate allowed* property turned off, and messages indicating this will be shown in the upgrade log. If these databases have been upgraded to 6.4, 6.5, or 7.0, and now use the XML export format, you can re-enable *generate allowed*.

Similarly, Release 7.1 does not support mapping project instances to or from 1. Existing database definitions that had *map project instances* turned on will have the *generate allowed* property turned off, and messages indicating this will

be shown in the upgrade log. If these databases have been upgraded to 6.4, 6.5, or 7.0, you can re-enable *generate allowed*.

Last, the *handover database* setting was retired in Release 7.0. A unique replication path between databases is no longer required. Instead, a new *handover allowed* control allows you to define whether that database appears as a valid handover database in dialog boxes.

### **DCM database definition for this database in other databases**

After upgrading a database to Release 7.1 from Release 6.4, 6.5, or 7.0, you must update the DCM database definitions for that database in all the other databases in the DCM cluster that have a definition for it. In the case of databases at other geographic sites, you should contact the administrators at the sites and advise them of the changes required. You should ensure that these changes have been performed before resuming DCM replication between the upgraded database and those other databases.

These are the checks and steps you or the remote administrator should perform:

1. Verify that all databases in the cluster that can replicate directly or indirectly with the upgraded 7.1 database have themselves been upgraded to 7.1, or are running 6.4 with the required patches or 6.5.
2. If you have moved the database to a new location, verify that the database path in the DCM database definition is updated to reflect the new location.
3. If you have used auto-receive, verify that the CCM\_HOME setting is updated to reflect your new Release 7.1 installation directory.

### **Replicating releases, templates and process rules**

In releases of Rational Synergy prior to 6.5, all release definitions and templates that were allowed to be transferred using DCM were sent with all transfer sets that included releases.

In Releases 7.0 and 7.1, transfer sets have a release scope and a release query to control the inclusion of release definitions, together with their associated release-specific process rules and templates. If you upgrade your database from 6.4 or 6.5, the previous settings on the transfer sets were converted to the new scope to ensure compatibility. However, because it is now possible to exert more control over the transfer of releases and templates, you may want to adjust these settings accordingly.

To replicate generic process rules, you can either add them as direct members to a transfer set, or add a process definition to the transfer set.

**Note** Rational Synergy does not replicate processes or process rules from 7.1 to 6.4; if you want to use these new features in a set of databases, you must upgrade all those databases to Release 7.1.

For more information on the new features, see the *Readme* and the *Rational Synergy Distributed* document.

## DCM replication after upgrade

The upgrade to Release 7.1 is designed to minimize touching the `modify_time` of objects. DCM transfer packages generated immediately after upgrade may be slightly larger than normal, but this is not normally expected to cause noticeable impact to regular operation.

# Appendix A: The Upgrade Program

This appendix describes the Rational Synergy upgrade program, `ccmdb upgrade`.

## Command name

```
ccmdb upgrade
```

## Synopsis

```
ccmdb upgrade
[-f model_file]
[-m] model [model ...]
[-w] [-url server_url]
database_path [database_path ...]
```

## Role

You must be `ccm_root` to run this command.

## Description and uses

The upgrade program converts a database from Releases 6.4, 6.5, or 7.0 to Release 7.1. You must upgrade a database from a previous release before using it with Release 7.1.

**Note** This command does not support individual model installs.

The database to be upgraded must be on a Release 7.1 database server, either by upgrading a previous server using `ccm_install -u -s server`, or by first being packed or dumped from the previous server running the previous release, then unpacked or loaded into a Release 7.1 server.

The following is an example of how to upgrade the database `/vol/ccmdbs/production1` to Release 7.1, using the default model file.

```
ccm_root$ ccmdb upgrade /vol/ccmdbs/production1
```

## Options and arguments

`-f model_file`

This option specifies the model package file name.

If you do not specify the model file, the Rational Synergy default model name `$CCM_HOME/packfiles/base.model` is used. Use of non-standard models is not described in this document.

`-m model [model ...]`

This option specifies the list of model names to be installed. The model name is the same name as the model project name in the model database. The default models shipped by Rational Synergy are the base and modsup models.

**Note** Each model in the model file must have a unique name.

If this option is not specified, `ccmdb upgrade` will read the models that are currently installed on each databases and upgrade them accordingly.

If this option is specified, the new list will be used to override the current models. The sequence of the models listed in this option is the sequence of the models to be installed in the target database. All the current models that are not in the specified list will be removed. As a result, specifying the option `-m base` will cause the database to be upgraded to a Rational base model, removing all custom models present in a previous release.

`-url server_url`

This option specifies the CCM server that the upgraded databases should connect to. By default, upgraded databases are connected to the server on the default port of the database server host. The default port is the one you specified as the help server port during installation. It is saved in the `$CCM_HOME/etc/system_info.txt` file.

To start a Rational Synergy session in Web mode on a database, enter `cmsynergy -s server_url`.

Ensure that the `server_url` is a valid URL for a compatible server, starting with either `http://` or `https://`

See "About the CCM server" in the appropriate [Rational Synergy Administration Guide](#) for a detailed discussion about the CCM server.



-w

This option checks all database configuration files and controlled files of type `ascii` or its subtypes and converts the line endings from Windows to UNIX conventions or vice versa while performing the upgrade. The conversion affects controlled files in the archive and cache only; no work areas are updated.

**Caution** Because this operation changes the contents of static, archived files, it should be used with caution. Always retain the original pack file in case any problems are discovered.

*database\_path* [*database\_path* ...]

This option specifies the list of databases to be upgraded.

These must be absolute paths to databases visible from the current machine.

## Upgrade actions

The upgrade program then performs the following actions on each database that it upgrades:

1. Updates the target database schema to the Release 7.1 schema.
2. Updates the target database version to 7.1.
3. Saves the previous migrate rules as *database\_path/lib/Unix/migrate.old*.
4. Saves the previous `pt` directory as *database\_path/oldpt*.
5. Saves the previous `notify` directory as *database\_path/lib/oldnotify*.
6. Protects the target database.
7. Exports any types that were modified in the target database.
8. Finds the list of models installed in the target database.
9. Installs the required list of models and model additions from the `model` database to the target database.
10. Unprotects the target database.
11. Restores the original migrate rules file saved in step 3, and performs any upgrade that is required.
12. Starts a 7.1 session on the target database.
13. Runs the `ccm db_update -update` command to update the data in the target database to Release 7.1 format.
14. Converts line end conventions in ASCII files if the `-w` option was present.
15. Check the archive conversion status.
16. Removes obsolete files from the target database.
17. Connects the database to the default CCM server, or to the CCM server specified by the `-url` option.

## **Appendix B: Upgrade and Synergy 7.1**

This section discusses special considerations for upgrading to Synergy Release 7.1.

Rational Synergy 7.1 has many changes to underlying utilities that could affect your usage. Before upgrading, review the next section, “Changes in Rational Synergy 7.1”.

Note that after you have upgraded your database to Synergy 7.1, you can perform an archive conversion. The timing of the conversion is flexible; learn more about this in “C: Archive Conversion” on page 81.

### **Changes in Rational Synergy 7.1**

This section is a summary of changes in Rational Synergy 7.1 that you should take into account when planning your upgrade. These changes require additional testing beyond the testing you have done for previous releases.

- ObjectMake (`ccm_make`) and the pre-processor program (`ccm_cpp`) were removed from the product. If your build process depends on ObjectMake, you can continue to use it in Synergy 7.1 by following the instructions in this appendix. If you choose to do so, you should test that you are able to build your files with Synergy 7.1 before upgrading.
- Rational Synergy 6.5 and earlier used GNU RCS and zip to archive checked-in files. Releases 7.0 and 7.1 contain different versions of those utilities. Release 7.1 still uses those utilities to read old archives, but also provides a different mechanism to archive new checked-in files.

This change is transparent to all users. However, Rational has provided a utility for testing your archives from 6.4 or 6.5 to ensure the new utilities can read them. Test that the archives are readable for all existing databases before upgrading to Synergy 7.1; instructions for testing archives are provided in this appendix.

Additionally, you can use the new web interface, Synergy Web Administration Interface, to convert old archives to the new 7.1 format. Note that the conversion is optional in Synergy 7.1, and might result in the use of more disk space. See Appendix “C: Archive Conversion” on page 81.

If you find issues when you test your archives, you will be able to continue to use the `rsc` utilities from Synergy 6.5 SP2 in Synergy 7.1 by following the instructions in this appendix.

- The underlying utilities used for creating and retrieving data from pack files, DCM packages, and Save Offline (SOADF) packages have changed. Synergy uses `tar/untar` and `zip/unzip` utilities to package multiple files into a single, compressed file for these operations. Synergy 7.1 contains different versions of these utilities.

This change is transparent to all users and administrators. However, you should test existing pack files, DCM packages, and Save Offline packages that were created in a previous release to ensure that the new utilities can read those files. Instructions for testing those files are provided in this appendix.

- The underlying utilities used for compare and merge from Rational Synergy Classic CLI, and automated merge from the Classic GUI, have changed. Synergy uses `diff`, `diff3`, and `merge` utilities for these operations, and Release 7.1 contains different versions of these utilities.

This change should be transparent to all users and administrators. However, it is possible that the results of certain merges may differ, because there are sometimes several accurate ways in which conflicts can be resolved depending on how the merge utility analyzes character patterns between files.

If you find issues when you test your data, you will be able to continue to use the old compare and merge utilities from Synergy 6.5 SP2 in Synergy 7.1 by following the instructions in this appendix.

The following summary outlines issues to consider before upgrading to Release 7.1

1. Carefully test the following areas before upgrading to Synergy 7.1.
  - All pack files created using Release 6.5 or 6.4 that you intend to use with Synergy 7.1
  - All archived data checked in while running previous releases
  - All DCM packages created using Releases 6.5 or 6.4 that you intend to use with Synergy 7.1 or follow-on releases
  - All Save Offline (SOADF) packages created in previous releases that you intend to use with Synergy 7.1 or follow-on releases
  - ObjectMake, if you depend on it

For detailed information, see “Testing your data” on page 75.

2. You can copy ObjectMake and the utilities used in Synergy 6.5 SP2 for archiving checked-in files to be used in 7.1. See “Copying ObjectMake and utilities from Release 6.5” on page 77.

## Testing your data

This section provides instructions for testing pack files, archived data, DCM packages, Save Offline packages, and ObjectMake.

All of these tests require you to first install Synergy 7.1 for testing purposes.

Be sure to test your data in a non-production environment before upgrading.

Except for the last step (testing ObjectMake), you should do all of these tests before copying ObjectMake and utilities from Release 6.5 into your Synergy 7.1 installation, as described in “Copying ObjectMake and utilities from Release 6.5” on page 77.

### Testing pack files

Test your pack files as follows.

1. You must have installed Synergy 7.1 for testing purposes.
2. For each 6.4 SP1 or 6.5 SP2 pack file, unpack it in Release 7.1 using the `ccmdb unpack` command.
3. If the `ccmdb unpack` command reports any issues, report them to [IBM Rational Software Support](#) for guidance.

### Testing archived data

To test your archived data, Synergy 7.1 includes a new command called `ccm archive_check`.

1. You must have installed Synergy 7.1 for testing purposes.
2. For each 6.4 SP1 or 6.5 SP2 database, complete the following:
  - Upgrade a test copy of the database to Release 7.1.
  - Run the `ccm archive_check` command on the database. Usage is described in “Checking contents of archive with `ccm archive_check`” on page 77
3. If the `ccm archive_check` command reports any issues, report them to [IBM Rational Software Support](#).

If the `ccm archive_check` reports issues, copy the archiver utilities from Release 6.5 into your Synergy 7.1 installation, as described in “Copying ObjectMake and utilities from Release 6.5” on page 77.

### Testing DCM packages

Test your DCM packages as follows.

1. You must have installed Synergy 7.1 for testing purposes.
2. For each DCM package, complete the following:
  - Upgrade a test copy of the receiving database to 7.1. (You may have done this already when testing archived data.)
  - Receive the DCM packages, in order.
3. If the DCM receive reports any issues, report them to [IBM Rational Software Support](#) for guidance.

### **Testing Save Offline (SOADF) packages**

Test your Save Offline packages as follows:

1. You must have installed Synergy 7.1 for testing purposes.
2. For each Save Offline package, complete the following:
  - Upgrade a test copy of the restoring database to 7.1. (You may have done this already when testing archived data.)
  - Restore the packages, in order.
3. If the restore reports any issues, report them to [IBM Rational Software Support](#) for guidance.

### **Testing ObjectMake**

To test ObjectMake, you must have an installation of Synergy 6.5 SP2 with patch 6.5 SP2 01, or its replacement, applied. Patch 6.5 SP2 01 includes an important change to ObjectMake that you will need in order to use ObjectMake with Release 7.1.

If you are running Synergy Release 6.4, you do not need to upgrade your data to release 6.5 SP2. However, you do need to install 6.5 SP2 with patch 6.5 SP2 01, so that you can access files from that installation.

Test ObjectMake as follows:

1. You must have installed Synergy 7.1 for testing purposes.
2. You must have installed Synergy 6.5 SP2 and applied patch 6.5 SP2-01, as described above.
3. Copy the ObjectMake programs from the 6.5 SP2 installation to the 7.1 installation as described in “Copying ObjectMake and utilities from Release 6.5” on page 77. (You may have already done this in the previous procedure, “Testing your data” on page 75.)
4. For each database where you use ObjectMake, complete the following:

- Upgrade a test copy of the database to 7.1. (You may have done this already during an earlier step.)
  - Build your products, ensuring that ObjectMake works as it did in previous releases.
5. If you encounter any issues, report them to [IBM Rational Software Support](#) for guidance.

## Copying ObjectMake and utilities from Release 6.5

If you rely on ObjectMake, or if you find issues when testing with Release 7.1 as described in the section “Testing archived data” on page 75, you can copy ObjectMake and other utilities from a previous release.

**Note** If you are still running Release 6.4, you must install Synergy Release 6.5 SP2 and apply patch 6.5 SP2 01, or its replacement. This includes changes to ObjectMake that are required to use the program with Release 7.1. You do not need to upgrade your databases to Release 6.5 SP2, but you do need an installation directory containing 6.5 SP2 with patch 1 applied.

To copy ObjectMake and utilities, complete the following:

1. You must have installed Synergy 7.1.
2. You must have installed Synergy 6.5 SP2 and applied patch 6.5 SP2-01.
3. Log in as user `ccm_root`.
4. Enter the following command:

```
ccm_copy_tools old_install_dir new_install_dir
```

The `ccm_copy_tools` command supports several variations. You can use it to save a copy of the utilities from a previous installation for future use, and to apply a saved copy of the utilities to Synergy 7.1. Even if you do not intend to copy the utilities into your 7.1 installation, it is a good idea to save a copy of them from your Synergy 6.5 installation.

See the section “Copying utilities with `ccm_copy_tools`” on page 79 for more information about this program.

## Checking contents of archive with `ccm archive_check`

Use the new `ccm archive_check` command to check the contents of the archive within a Synergy database. It will confirm that all of the source files

archived using a previous release, such as Synergy 6.5, can be retrieved successfully using the new archive utility in Synergy 7.1.

You can check all archived files, only files of a particular type, or specific files.

To run this command, you must first install Synergy 7.1. Users must be in the `ccm_admin` role to use this command.

To test archive files on a database that has already been upgraded to 7.1, run the command using the syntax described below.

1. Start a Classic CLI session on the older database.
2. Enter the following commands:

```
ccm set role ccm_admin
ccm archive_check ...
```

The following describes the command syntax.

```
ccm archive_check [-t|-type type] [file_spec...]
[-gnu gnu_dir] [-bsd bsd_dir]
```

`-bsd bsd_dir`

Specifies the Synergy installation directory where the BSD executables (`bsdci`, `bsdco`, `bsdrccs`, `bsdlog`, `ccm_zip`, and `ccm_unzip`) exist. The default is `$CCM_HOME/bin/util/`. You should not need to specify this argument if you are running this command in your Synergy 7.0 installation.

`file_spec`

Indicates a specific file or set of files whose archive you want to check.

`-gnu gnu_dir`

Specifies the Synergy installation directory where the GNU executables (`ccm_gci`, `ccm_gco`, `ccm_glog`, `ccm_grcs`, and `ccm_gzip`) exist. The default value is `$CCM_HOME/bin/util/`, but if you have not copied the utilities from a previous release using the `ccm_copy_tools` command, you should specify the path to the `bin/util/` directory in your Synergy 6.4 or 6.5 server installation directory.

`-type|-t`

Indicates to check files of the specified type only. If you have a very large database, this command enables you to check subsets of data in separate commands.



### Examples

- Check all archives in the current Synergy 7.1 database, using the GNU utilities from the Synergy 6.5 SP2 installation.  

```
ccm archive_check -gnu /usr/local/ccm65sp2/bin/util/
```
- Check all archives for objects of the type `java` in the current Synergy 7.1 database, using the GNU utilities from the Synergy 6.5 SP2 installation.  

```
ccm archive_check -gnu /usr/local/ccm65sp2/bin/util/  
-t java
```
- Check the archives for version 14 of `main.c` in the current Synergy 7.1 database, using the GNU utilities from the Synergy 6.5 SP2 installation.  

```
ccm archive_check -gnu /usr/local/ccm65sp2/bin/util/  
main.c-14
```

## Copying utilities with `ccm_copy_tools`

This is a script that copies utilities from a Synergy 6.5 or 7.0 installation directory to the Synergy 7.1 installation directory. Alternatively, you can use it to save the utilities from a previous release, or apply previously saved utilities into a Synergy Release 7.1 installation.

This command must be run as user `ccm_root` because it must be able to write to your Synergy 7.1 installation directory.

The following describes the command syntax.

```
ccm_copy_tools old_installation_dir new_installation_dir
```

In this form of the command, 6.5 tools are copied directly from the old Synergy installation directory to the new one.

You will see an error in the following cases:

- Either of the two installation directories does not exist.
- The two installation directories refer to the same directory.
- The old installation directory is not from Synergy 6.5 or later.
- The new installation directory is not from Synergy 7.0 or 7.1.

Note that it is legal for the `old_install_directory` to refer to an existing Synergy 7.0 or 7.1 directory that was previously updated with 6.5 tools; this makes it possible to copy tools from one 7.1 installation to another, or from a 7.0 installation to a 7.1 installation, and so forth.

```
ccm_copy_tools -o output_file old_install_dir
```

This form of the command copies 6.5 tools from an existing Synergy 6.5, 7.0, or 7.1 installation to a saved file for later installation elsewhere. This is useful when the previous and new Synergy installations are not visible to each other, so the direct copying performed in the previous form of the command cannot be used.

```
ccm_copy_tools -i input_file [new_install_dir]
```

This form of the command copies 6.5 tools from a saved file into an existing Synergy 7.0 or 7.1 installation. The saved file must have been produced by an earlier use of the `ccm_copy_tools -o` command. You'll see an error if the new installation directory is not from Synergy 7.0 or 7.1.

In all modes, you can also use the following options:

- a Copy the tools used for archiving.
- m Copy the files used for ObjectMake.
- d Copy the tools used for diff and merge.
- v Show the path to each file as it is copied.

The default is to copy files needed for all purposes.

## **Appendix C: Archive Conversion**

This section discusses archive conversion in Synergy Release 7.1. The following is the flow of procedures:

- Complete the upgrade from 6.4, 6.5, or 7.0 to Release 7.1.
- Complete the steps in “Ensuring that archived data is readable” on page 82.
- Complete the steps in “Checking for file system archive errors” on page 83.
- Complete the steps in “Starting the Rational Synergy Web Administration Interface” on page 84.
- Complete the steps in “Running the archive conversion” on page 84.

### **Understanding archive conversion**

Archive conversion is the process of reading older archives produced by GNU or BSD archivers, and writing new archives in the 7.1 format. The archive conversion process deletes old archive files and directories as it converts archives.

Rational provides a Synergy Web Administration Interface that you can use to start, stop, and report on the progress of archive conversion.

### **When to perform archive conversion**

Archive conversion is optional in Synergy 7.1.

You can perform archive conversion any time after you upgrade your Rational Synergy database to Release 7.1.

The advantages of converted archives include the following:

- The `ccm fs_check` command uses less memory to find unused converted archives.
- Converted archives hold more information to aid recovery in the event of database corruptions, disk crashes, and similar events.

In some cases, a database might consume more disk space after archive conversion in Synergy 7.1. A future release will reduce the space taken by archives; for this reason, you might want to postpone archive conversion until a later release.

The CM administrator must run the `ccm fs_check` command and resolve any reported errors before attempting archive conversion.

## Preparing for archive conversion

In preparation for archive conversion, first check if you need to run the `ccm archive_check` command, which is described in “Ensuring that archived data is readable” below. Next, see “Checking for file system archive errors” on page 83 for information about running the `ccm fs_check` command, which is mandatory prior to performing archive conversion.

### ***Ensuring that archived data is readable***

The `ccm archive_check` command checks archived data to ensure that it is readable.

You will need to run the `ccm archive_check` command if your site ran Rational Synergy on 6.x, or 7.0 with `ccm_copy_tools`, or runs 7.1 without using `ccm_copy_tools`. See “Checking contents of archive with `ccm archive_check`” on page 77.

Rational Synergy users will fall into one of the following categories. However, note that regardless of the category, once a site has run a complete archive conversion, neither the GNU nor BSD archiving tools will be used, and `ccm archive_check` is no longer required.

- Sites that upgrade from releases before 7.0 and do not use `ccm_copy_tools`  
Run `ccm archive_check` to ensure your existing GNU archives from 6.x are readable by the BSD archiver in 7.0 and 7.1.
- Sites that upgrade from 7.0 to 7.1 and who drop use of `ccm_copy_tools`  
If your site used `ccm_copy_tools` in Synergy 7.0 to copy the GNU archivers, your site might have old GNU archives from 6.x and will also have new GNU archives produced by the copied archiver in 7.0. If you decide not to copy the GNU archiver forward to 7.1, the BSD archiver will be used to read these GNU archives. Use `ccm archive_check` to ensure the archives are readable.

There is no need to run `ccm archive_check` in the following situations:

- Sites that upgrade to 7.1 and start or continue use of `ccm_copy_tools`  
These sites may have a mix of GNU, BSD, and 7.1 archives. However, each archive will be read by the corresponding tool, so there is no need to run `ccm archive_check`.
- Sites that were new Synergy users in 7.0 and never used `ccm_copy_tools`

These sites will have only BSD and 7.1 archives. Because there are no GNU archives, there is no need to need to run `ccm archive_check`.

- Sites that are new Synergy users in 7.1

These sites will have only 7.1 archives. There are no GNU archives, so there is no need to need to run `ccm archive_check`.

### **Checking for file system archive errors**

The `ccm fs_check` command is responsible for checking that the metadata, cache, and archive portions of a database are consistent. The following are three reasons why file system checks are important to you.

- In Release 7.1, if a static versioned object does not have an archive, this means that the archiver has not yet processed that object. This is normal behavior and is not typically treated as an error.
- If an object has been static without an archive for a longer time than specified by a user, this indicates a possible problem because the archiver might not be running. You will receive a warning.

The `ccm fs_check` command has a new `-c | -cutoff_time time` option. Any object versions checked in before the cutoff time but not yet archived produce a warning. The default cutoff is `-2:0:0:0`. You will receive a warning for any files that were checked in earlier than the day before yesterday but have not yet been archived.

- After archive conversion is complete, the check for unused archive files now uses less memory than in Release 7.0 and earlier.

## Archive conversion

The following discussion details how to convert archived data using the Rational Synergy Web Administration Interface. You must be a CM administrator to run an archive conversion.

### **Starting the Rational Synergy Web Administration Interface**

1. Open a browser.
2. Enter `http://server:port/admin`  
where `server:port` is the server and port number on which the Rational Synergy Web Administration Interface resides, for example,  
`http://usir-sol2:8400/admin`  
To view the URL for CCM servers, use the `ccm monitor` command.

### **Running the archive conversion**

1. In the Rational Synergy Web Administration Interface, click the middle tab, **Archive Conversion**.  
You will see a list of databases that need converting and the status of each archive conversion. The far right column contains a button to start or stop conversions, or to remove databases that no longer need to be converted.
2. Start archive conversion for a database by clicking the **Start** button. The button will change from **Start** to **Stop**, and the status will change to **Initializing** while the conversion program queries for objects that need to be converted. This initial query can take several minutes.
3. You can stop archive conversion for a database at any time by clicking the **Stop** button. The button will change from **Stop** to **Start**; the next time you start conversion, it will continue from where it left off.
4. While the archive conversion is running, you will have to manually refresh the browser to view updated information, such as the total number of objects to be converted, the number remaining, and the percentage complete.
5. If archive conversion fails to convert all archives, the status column will show an **Error** link. Errors during conversion require you to contact IBM Rational Synergy Support. Clicking the **Error** link will add information to the page, such as the number of errors, a list of the objects that failed to be converted, and a link to the IBM Rational Synergy Support site.

6. Once archive conversion has completed, the button will change to **Remove**. Click the **Remove** button to remove the row for this database from the archive conversion tab of the Rational Synergy Web Administration Interface.

If the database is not removed, but persists with the button changed to **Start**, the archive conversion is not complete. Check for errors as described above in step 5 on page 84, and run the command `ccm fs_check` as described in “Checking for file system archive errors” on page 83.

7. Exit the Rational Synergy Web Administration Interface at any time by clicking the **Logout** link to the right of the tabs.

If you have previously run `ccm clean_cache` on a database, archive conversion will extract the previously deleted cache files from the old archives in preparation for archiving them with the new archiver. As a result, the database might occupy more disk space. After archive conversion is completed, you might want to run `ccm clean_cache` again to recover this space. In some cases, you might need to run `ccm clean_cache` repeatedly while the archive conversion is in progress, if you are short of disk space for the database cache.





## **Appendix D: Notices**

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