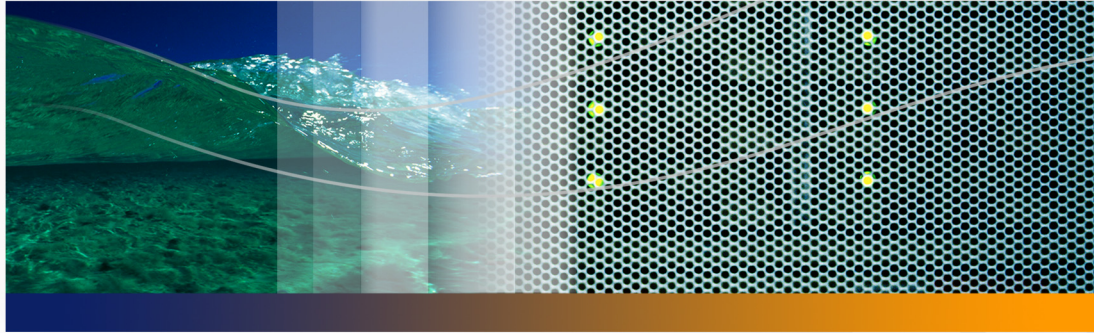


Peregrine Systems, Inc.

# ServiceCenter® 6.1



## Server Upgrade Guide



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# About This Guide

Welcome to the *ServiceCenter 6.1 Server Upgrade Guide*. This guide has instructions to upgrade the ServiceCenter server run-time environment. Follow the steps in this guide for a successful server upgrade.

The *ServiceCenter 6.1 Server Upgrade Guide* has this information:

This section	Provides information about
Chapter 1, Server Upgrade Options	The upgrade options available and a list of features available with the 6.1 server.
Chapter 2, Server Upgrade Tasks	The procedures needed to upgrade from previous versions of ServiceCenter to the 6.1 server.

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## Software requirements

To perform a server upgrade, you must have access to the ServiceCenter 6.1 installation CD, which includes the following:

- ServiceCenter Server installation files
- ServiceCenter Windows Client installation files:
  - Windows Client 6.1.0.0
  - ServiceCenter ODBC Driver 6.1.0.0
  - ReportCenter
- ServiceCenter Help Server
- ServiceCenter Update Site Utility (as an archive)
- ServiceCenter Client Packaging Utility
- ServiceCenter Web Tier (as a Web application archive `sc.war` and `sc.ear`)
- PDF of the *ServiceCenter 6.1 Accessibility Guide*
- PDF of the *ServiceCenter 6.1 Installation Guide*
- PDF of the *ServiceCenter 6.1 Server Upgrade Guide*

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## Knowledge requirements

The instructions in this guide assume a working knowledge of Peregrine Systems ServiceCenter and your current production environment.

- For information about a particular platform, see the appropriate platform documentation.
- For information about customizing your environment using parameters, search for parameters in the ServiceCenter 6.1 Help.
- Before you run the ServiceCenter server, see [Using ServiceCenter](#) in the ServiceCenter 6.1 Help.

- For configuration and system administration information, see [Configuration and Implementation](#) and [System Administration](#) in the ServiceCenter 6.1 Help.
- For database configuration information, search for [Database management](#) in the ServiceCenter 6.1 Help.

---

## Need further assistance?

For further information and assistance with this release, you can download documentation or schedule training.

### Customer Support

For further information and assistance, contact Peregrine Systems' Customer Support at the Peregrine CenterPoint Web site.

To contact customer support:

- 1 In a browser, navigate to <http://support.peregrine.com>
- 2 Log in with your user name and password.
- 3 Follow the directions on the site to find your answer. The first place to search is the KnowledgeBase, which contains informational articles about all categories of Peregrine products.
- 4 If the KnowledgeBase does not contain an article that addresses your concerns, you can search for information by product, search discussion forums, and search for product downloads.

### Documentation Web site

For a complete listing of current ServiceCenter documentation, see the Documentation pages on the Peregrine Customer Support Web.

To view the document listing:

- 1 In a browser, navigate to <http://support.peregrine.com>.

- 2 Log in with your login user name and password.
- 3 Click either **Documentation** or **Release Notes** at the top of the page.
- 4 Click the **ServiceCenter** link.
- 5 Click a product version link to display a list of documents that are available for that version of ServiceCenter.
- 6 Documents may be available in multiple languages. Click the **Download** button to download the PDF file in the language you prefer.

You can view PDF files using Acrobat Reader, which is available on the Customer Support Web site and through Adobe at <http://www.adobe.com>.

**Important:** Release Notes for this product are continually updated after each release of the product. Ensure that you have the most current version of the Release Notes.

## Education Services Web site

Peregrine Systems offers classroom training anywhere in the world, as well as “at-your-desk” training through the Internet. For a complete listing of Peregrine’s training courses, refer to the following Web site:

<http://www.peregrine.com/education>

You can also call Peregrine Education Services at +1 858.794.5009.





# 1 Server Upgrade Options

CHAPTER

This chapter describes the options and features included with ServiceCenter 6.1 in the following sections:

- Upgrade options on page 10
- Features of the 6.1 server on page 10

## Upgrade options

You can upgrade the server run-time environment separately from the ServiceCenter applications. Depending upon what version of ServiceCenter you are upgrading from you may be required to upgrade your applications as well to produce a supported production configuration. The following table lists the upgrade options available with ServiceCenter 6.1.

Previous version of ServiceCenter	Upgrade options
6.0.x	Upgrade server to 6.1 and run 6.0.x applications
	Upgrade server to 6.1 in preparation of upgrading applications to 6.1
5.x and 4.x	Upgrade server to 6.1 in preparation of upgrading applications to 6.1

## Features of the 6.1 server

See the [What's New](#) in the ServiceCenter 6.1 Help for a list of new features.



# 2 Server Upgrade Tasks

## CHAPTER

This chapter describes the tasks needed to upgrade to the ServiceCenter 6.1 server.

This chapter includes the following topics:

- [Tasks for upgrading pre-6.x servers to 6.1 on page 12](#)
- [Tasks for upgrading 6.0.x servers to 6.1 on page 12](#)
- [Preparing the development environment on page 13](#)
- [Converting data files to UTF-8 on page 14](#)
- [Converting attachments on page 17](#)
- [Converting favorites on page 23](#)

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## Tasks for upgrading pre-6.x servers to 6.1

The following tasks are for upgrading ServiceCenter 4.x and 5.x servers to 6.1 in preparation for an application upgrade. Contact Customer Support to upgrade servers from pre-4.x versions of ServiceCenter.

**Important:** You cannot run a 6.1 server with pre-6.x applications. See the *ServiceCenter 6.1 Application Upgrade Guide* for more information.

**Step 1** Prepare the development environment. See [Preparing the development environment on page 13](#).

**Step 2** Convert data files to UTF-8. See [Converting data files to UTF-8 on page 14](#).

**Step 3** Convert attachments to new table format. See [Converting attachments on page 17](#).

**Step 4** Convert favorites to inboxes. See [Converting favorites on page 23](#).

See the *ServiceCenter 6.1 Application Upgrade Guide* to complete your upgrade.

---

## Tasks for upgrading 6.0.x servers to 6.1

The following tasks are for upgrading ServiceCenter 6.0.x servers to 6.1. You can continue running your ServiceCenter 6.0 applications or do an application upgrade to take advantage of all the latest features. See the *ServiceCenter 6.1 Application Upgrade Guide* for more information.

**Step 1** Prepare the development environment. See [Preparing the development environment on page 13](#).

**Step 2** Convert attachments to new table format. See [Converting attachments on page 17](#).

**Step 3** Convert favorites to inboxes. See [Converting favorites on page 23](#).

If you want to continue using ServiceCenter 6.0.x applications in your production environment, then you can replace the ServiceCenter 6.0.x production server with the upgraded 6.1 development environment. Otherwise, see the *ServiceCenter 6.1 Application Upgrade Guide* to complete your upgrade.

---

## Preparing the development environment

Peregrine recommends first deploying ServiceCenter 6.1 on a development environment to review new features and ensure system stability.

- 1 Back up the P4 or SQL data files from your pre-6.1 production server.

See the documentation for your prior version of ServiceCenter or relational database management system (RDBMS) for backup instructions.

- 2 Perform a custom install of the ServiceCenter 6.1 server on a development system. Do not install the sample database.

See the *ServiceCenter 6.1 Installation Guide* for instructions.

- 3 Install a ServiceCenter 6.1 Windows client on the development system or an available desktop system.

See the *ServiceCenter 6.1 Installation Guide* for instructions.

- 4 Load the copied data files on the development system.

See the ServiceCenter 6.1 Help or your RDBMS documentation for restore instructions.

- 5 Update the ServiceCenter 6.1 server's configuration file (`sc.ini`) to use the copied data files.

If your data is in P4 files, update the `path` parameter to indicate the location of your copied P4 data files.

If your data is on an RDBMS, update the `path`, `sqldb` and `sqllogin` parameters to indicate the connection information of your restored database.

See the ServiceCenter 6.1 Help for information on these parameters.

---

## Converting data files to UTF-8

Beginning with version 6.0, ServiceCenter stores all application and system files in UTF-8 character encoding. If you are upgrading from a pre-6.x release of ServiceCenter, then you must convert your data to UTF-8.

**Important:** Conversion to UTF-8 is not reversible. Peregrine Systems strongly recommends that you convert a backup copy of your database files.

If your ServiceCenter data is on a P4 database, then the UTF-8 conversion process converts both your system and user data to UTF-8.

If you have pushed your ServiceCenter data to a relational database management system (RDBMS), the UTF-8 conversion process only converts application and system data. The ServiceCenter user data remains in the codepage of your RDBMS (as defined by the `dblanguage` parameter). If you want to convert your user data to UTF-8, see your RDBMS documentation for information.

- 1 Stop the ServiceCenter 6.1 server.

- 2 If your ServiceCenter data is on an RDBMS, open the ServiceCenter configuration file (`sc.ini`) and verify that the `sql db` parameter points to the proper path for your database files.
- 3 Open an operating system command prompt, and navigate to the ServiceCenter RUN directory. For example on a default Windows installation:

```
cd C:\Program Files\Peregrine Systems\ServiceCenter Server\RUN
```

- 4 Type the following command:

```
scenter -converttoutf8
```

The amount of time for the conversion depends on the amount of data to be converted. ServiceCenter issues a confirmation message when the conversion is successful.

```
P4 database converted to UTF8
```

If your server is on a Unix operating system, type this command to stop the process and clear stored memory after the conversion is complete:

```
scstop u -if
```

- 5 Create a checkpoint backup and move it to your backup location.
- 6 Restart the ServiceCenter 6.1 server. You now have a ServiceCenter 6.1 server running with your old applications.

## Verifying UTF-8 conversion from 6.0.x servers

If you are upgrading from ServiceCenter 6.0.x and you have been using Oracle, DB2, or Sybase to store ServiceCenter data, you may need to verify the UTF-8 conversion. This step is not necessary for ServiceCenter versions prior to 6.0.x or for ServiceCenter 6.0.x servers where the data resided on either SQL Server or P4 databases. Likewise, it is not necessary to verify the conversion if your Oracle, DB2, or Sybase tables were already using UTF-8 codepages.

- 1 Stop the ServiceCenter 6.1 server.
- 2 Open the ServiceCenter configuration file (`sc.ini`) and verify that the `sql db` parameter points to the proper path for your database files.

- 3 Open an operating system command prompt, and navigate to the ServiceCenter RUN directory. For example on a default Windows installation:

```
cd C:\Program Files\Peregrine Systems\ServiceCenter Server\RUN
```

- 4 Type the following command:

```
scenter -verifyutf8
```

The ServiceCenter server scans the tables mapped to your RDBMS and repairs certain character sequences that ServiceCenter 6.0.x did not convert properly. The command creates a report of any data that it repaired or that it could not repair.

If your RDBMS uses Windows 1252 codepages, ServiceCenter 6.1 repairs any incorrect character sequences, provided there are no truncation errors from storing the column data in the RDBMS tables. You can avoid truncation errors by defining CHAR or VARCHAR fields with adequate field lengths.

If your RDBMS uses ISO codepages, it is likely that the verify utility cannot repair some characters. Contact Peregrine Customer Support with a list of all UTF-8 conversion errors.

- 5 Create a checkpoint backup and move it to your backup location.
- 6 Restart the ServiceCenter 6.1 server. You now have a ServiceCenter 6.1 server running with your old applications.



## Converting attachments

Earlier ServiceCenter versions stored all attachment files for a given record as a single binary unit in the SYSBLOB table. To display attachments stored in the SYSBLOB table, the ServiceCenter server had to retrieve the record, open the binary object, extract the desired attachment, and then display the attachment.

ServiceCenter 6.1 now stores each attachment individually in a new table called SYSATTACHMENTS. Attachment access is simpler and faster. To view existing attachments, you must migrate the contents of the SYSBLOB table to the SYSATTACHMENTS table. ServiceCenter has two ways of converting attachments.

- Run a background conversion process to convert all attachments over time. This is the preferred conversion method as administrators can schedule the conversion process and users can still access the system while the process is running. A system administrator can start and stop the background process as needed.
- Use on-demand conversion to convert only attachments in records that operators view or update. This secondary conversion method allows users access to all attachment records.

If your system contains OLE object formatted attachments, you have to manually convert them. See the knowledge article [Reading OLE Attachments in ServiceCenter™ Versions 6.0 and 6.1](#) from the Customer Support Web site for more information.

### Loading the attachment conversion utility

Before you convert your attachments, load the new SYSATTACHMENTS table onto your system.

- 1 Start the ServiceCenter 6.1 server.
- 2 Using a ServiceCenter 6.1 client, log on to ServiceCenter with an administrator account.
- 3 Click **Toolkit > Database Manager**.

- 4 Right-click the form and select **Import/Load**.
- 5 Type or select the following information

Field	Description
<b>File Name</b>	Type the name and path of the attachment conversion utility: <ServiceCenter server installation path>\serverUpgrade\sysattachments.un1
<b>File Type</b>	Select the source operating system of the unload file.
<b>Messages Option</b>	Select <b>All Messages</b> to view all messages generated while loading the file.

**Note:** You can view the contents of an unload file before importing it by clicking **List Contents**.

- 6 Click **Load FG**.

The server loads the attachment conversion utility and necessary tables.

- 7 If your system is mapped to an RDBMS, the server prompts you to indicate whether you want ServiceCenter to automatically update the RDBMS or to have your database administrator perform the update.

## Reviewing SQL mappings

If you store ServiceCenter data on an RDBMS, ensure that the SYSATTACHMENT table has the mapping properties listed below.

**Note:** You must have administrative access to the RDBMS to change these settings.

- The **data** column of the SYSATTACHMENT table must be able to store pure binary data. This column should have a data type of either BLOB or image.
- The sqlmapping record for the **data** column must have a value of true for the **SQL RC** column.
- The **filename** column of the SYSATTACHMENT table should have a character data type sufficiently large enough to contain the longest attachment file name in your system, such as for example, varchar(256).

## Reviewing P4 attachment pool size

If you store ServiceCenter data on a P4 database, the server stores the SYSATTACHMENT table in pool 3 after loading the new dbdict. You should verify that this pool has sufficient space to store all the attachments in your system. If needed, create additional pools to store the attachments in your system or move the table to its own pool.

See the *ServiceCenter 6.1 Database Conversion and RDBMS Support Guide* for more information about data pools.

**Note:** You must have administrative access to the ServiceCenter server operating system to change the pool settings.

## On-demand conversion

If an operator views the Attachment tab on a record containing an unconverted attachment, then the server converts all attachments in that record and saves them in the new SYSATTACHMENTS table. This on-demand conversion only occurs when using ServiceCenter clients and the Peregrine Web Services API.

## Background conversion

You can start a dedicated ServiceCenter process to run the attachment conversion utility. This background process converts attachments while the server is running. While the server accepts client connections during the conversion process, users may notice decreased system performance. If the conversion process stops, it can resume where it left off when you restart the attachment conversion utility.

The time the conversion process takes to complete depends on the amount of data to be converted and on the system performance of your RDBMS and ServiceCenter server. Conversion times generally decrease if you run the background process during nonpeak hours. A general performance metric is 25,000 attachments converted in an hour of run time. A million attachments in a large system could take 40 hours of run time.

**Warning:** Do not add, change, or delete records from the SYSBLOB or SYSATTACHMENTS tables with anything other than the attachment conversion utility or a ServiceCenter client during the background conversion process. You can lose data if any SQL tool or

customer-written application changes the SYSBLOB or SYSATTACHMENTS tables.

## Setting attachment segment size

The ServiceCenter server divides each attachment into segments based on the value of the `attachmentsegmentsize` parameter. It is important that you determine the desired attachment segment size prior to conversion because once the server converts an attachment, the only way to change the segment size is to manually edit and save every converted attachment again. If you prefer to keep attachments in as few segments as possible, then set the attachment segment size to its 2-GB maximum value. See the ServiceCenter 6.1 Help for information about this parameter.

- 1 Stop the ServiceCenter 6.1 server.
- 2 Open an operating system command prompt, and navigate to the ServiceCenter RUN directory. For example on a default Windows installation:

```
cd C:\Program Files\Peregrine Systems\ServiceCenter Server\RUN
```

- 3 Open the ServiceCenter initialization file (`sc.ini`) in a text editor.
- 4 Add the `attachmentsegmentsize` parameter. For example:

```
attachmentsegmentsize:2147483647
```

See the ServiceCenter 6.1 Help for information about this parameter.

- 5 Save the initialization file.
- 6 Restart the ServiceCenter 6.1 server.

## Starting the attachment conversion process

Peregrine Systems recommends that you start the attachment conversion process from an operating system command prompt so that you can include additional parameters such as logging settings.

- 1 Stop the ServiceCenter 6.1 server.

- 2 Open an operating system command prompt, and navigate to the ServiceCenter RUN directory. For example on a default Windows installation:

```
cd C:\Program Files\Peregrine Systems\ServiceCenter Server\RUN
```

- 3 Type the following command to start the ServiceCenter server and the attachment conversion process with a dedicated log file:

```
scenter -convertsysblob -log:..\logs\convertsysblob.log  
-numberoflogfiles:15 -maxlogsize:5242880
```

ServiceCenter converts attachments from the SYSBLOB table to the SYSATTACHMENTS table. During the conversion process, the server deletes records from the SYSBLOB table and adds records to the SYSATTACHMENTS table. If the background process cannot convert a record, it preserves the record in the SYSBLOB table and creates a log entry of the error.

**Note:** You can stop and restart the attachment conversion process as needed. If you stop the process, it resumes converting attachments from where it last stopped.

After completion, the server displays the message:

```
SYSBLOB file conversion to SYSATTACHMENTS completed  
successfully.
```

## Verifying the attachment conversion process

You have two ways to verify and monitor the progress of the attachment conversion process:

- View the contents of the SYSBLOB and SYSATTACHMENTS tables
- Review the log file

You can use a ServiceCenter client to review the contents of the SYSBLOB and SYSATTACHMENT tables. As the conversion progresses, the number of records in the SYSBLOB table should decrease, while the number of records in the SYSATTACHMENTS table should increase. Records in the SYSBLOB table with a segment number of zero indicate attachments still to be converted. Records in the SYSATTACHMENT table with a segment number of zero indicate attachments that have already been converted.

If you started a ServiceCenter process with a dedicated log file, you can review the log file for periodic updates. Review the log file you started to see what error messages the server produced. If your system contains any attachments with OLE objects, the log file will indicate the table and record containing these attachments. During a normal conversion process, you should see a series of informational messages regarding attachment conversions.

**Note:** Some earlier versions of ServiceCenter stored empty structures in the SYSBLOB table. The background process reports these empty structures and deletes them during conversion.

If the conversion is successful, you should have no remaining records in the SYSBLOB table. You may safely delete the SYSBLOB table after conversion. If the SYSBLOB table still contains records after the conversion, then note the values of the **application** and **topic** fields for these records. You can use these values to determine the associated table and record for the attachment.

If the associated records for these attachments no longer exist, then you can safely delete the SYSBLOB record. If the associated records still exist, then you can use the following steps to reconcile them.

- 1 Log on to the production server hosting your previous version of ServiceCenter.
- 2 Search for a record containing an unconverted attachment.

The application name identifies the related record table name and the topic identifies the unique key of the related record containing the attachment.

- 3 Open the attachments in the record and save them on a local hard drive.
- 4 Delete the existing attachments from the record.
- 5 Add the attachments back to their proper records on your new ServiceCenter system.

See the ServiceCenter 6.1 Help for information on adding attachments.

## Converting favorites

Earlier versions of ServiceCenter used inboxes to launch reusable queries. With ServiceCenter 6.0, the server also offered favorites that overlapped with the existing inbox functionality. With ServiceCenter 6.1, the server now stores all data used by inboxes, charts, dashboards, and favorites in the inbox table. You can access inboxes by expanding the Favorites folder, or you can continue to access them using traditional ServiceCenter navigation.

The inbox and favorites conversion process migrates the contents of the systext table to the inbox table. This migration ensures that favorites from ServiceCenter 6.0 and inboxes from all earlier releases work seamlessly in ServiceCenter 6.1.

## Backing up existing inboxes and favorites

Before converting your favorites and inboxes, you should create an unload file consisting of the data in the systext and inbox tables.

See the ServiceCenter 6.1 Help for information on creating unload files.

## Loading the favorites conversion utility

Before conversion you must load the favorites conversion utility.

- 1 Start the ServiceCenter 6.1 server.
- 2 Using a ServiceCenter 6.1 client, log on to ServiceCenter with an administrator account.
- 3 Click **Toolkit > Database Manager**.
- 4 Right-click the form and select **Import/Load**.

## 5 Type or select the following information

Field	Description
<b>File Name</b>	Type the name and path of the favorites conversion utility: <ServiceCenter server installation path>\serverUpgrade\favorites_conversion.unl
<b>File Type</b>	Select the source operating system of the unload file.
<b>Messages Option</b>	Select <b>All Messages</b> to view all messages generated while loading the file.

**Note:** You can see the contents of an unload file before importing it by clicking **List Contents**.

## 6 Click **Load FG**.

The server loads the favorites conversion utility and necessary tables.

## 7 If your system is mapped to an RDBMS, the server prompts you to indicate whether you want ServiceCenter to automatically update the RDBMS or to have your database administrator perform the update.

## Reviewing SQL mappings

If you store ServiceCenter data on an RDBMS, ensure that the inbox table has the mapping properties listed below.

**Note:** You must have administrative access to the RDBMS to change these settings.

- The **query** column of the inbox table should have a character data type sufficiently large to avoid truncating long queries, such as varchar(256).
- The **normalized\_query** column of the inbox table should have a character data type sufficiently large to avoid truncating long queries, such as varchar(256).
- The **short\_query** column of the inbox table should have a character data type sufficiently large to avoid truncating long queries, such as varchar(256).



- The **short\_normalized\_query** column of the inbox table should have a character data type sufficiently large to avoid truncating long queries, such as `varchar(256)`.
- The **inbox\_name** column of the inbox table should have a character data type sufficiently large to avoid truncating long inbox names, such as `varchar(256)`.

## Updating the unique key of the inbox table

To run properly, the favorites conversion utility requires changes to the inbox database dictionary file.

### ServiceCenter P4 database

The following instructions are only for systems where ServiceCenter data is on the P4 database.

- 1 Start the ServiceCenter 6.1 server.
- 2 Using a ServiceCenter 6.1 client, log on to ServiceCenter with an administrator account.
- 3 In the System Navigator, expand **System Definition > Tables**.
- 4 Double-click the **inbox** table.
- 5 Click the **Fields and Keys** tab.
- 6 In the **Keys** section, click the **Unique** node.
- 7 In the **General** section, add the following fields to be the unique key:
  - `container.id`
  - `inbox.name`
  - `inbox.type`
  - `operator.name`

- 8 Click **Save**.

ServiceCenter prompts you to regenerate the key.

- 9 Click **Yes**.

## RDBMS

On systems where ServiceCenter data is pushed to an RDBMS, you must have a database administrator make the following changes to the inbox table.

- Change the unique key to contain the following fields:
  - `container.id`
  - `inbox.name`
  - `inbox.type`
  - `operator.name`

## Running the favorites conversion utility

After updating the inbox database dictionary, you can run the favorites conversion utility.

- 1 Start the ServiceCenter 6.1 server.
- 2 Using a ServiceCenter 6.1 client, log on to ServiceCenter with an administrator account.

**Important:** The user who runs the favorites conversion utility becomes the owner of all inboxes on the system, and as such will be able to view and edit all inboxes. If necessary, you may want to create a special administrator user to run the favorites conversion and own inboxes.

- 3 In the ServiceCenter command line, type the following command:

```
rad
```

The RAD Editor opens.

- 4 In the Application field, type the following:

```
convert.old.favorites
```

- 5 Click **Search**.
- 6 Click **Test**.
- 7 Click **Proceed**.

ServiceCenter converts the existing inboxes and favorites to the new table properties. When complete, the server displays the following message:

```
Favorites conversion complete.
```

- 8 Check for error messages in the Windows client messages view and in the server log file.
- 9 Create a checkpoint backup of the ServiceCenter 6.1 server and copy it to the Backups folder.

## Adding additional keys to the inbox table

After running the favorites conversion utility, you need to add additional keys to the inbox database dictionary.

### ServiceCenter P4 database

The following instructions are only for systems where ServiceCenter data is on the P4 database.

- 1 Start the ServiceCenter 6.1 server.
- 2 Using a ServiceCenter 6.1 client, log on to ServiceCenter with an administrator account.
- 3 In the System Navigator, expand **System Definition > Tables**.
- 4 Double-click the **inbox** table.
- 5 Click the **Fields and Keys** tab.
- 6 In the **Keys** section, click the **No duplicates** node.
- 7 In the **General** section, add `inbox.id` as a No duplicates key.

**8 Click Save.**

ServiceCenter prompts you to regenerate the key.

**9 Click No.****10 In the Keys section, click the Nulls and duplicates node.****11 In the General section, add the following fields as Nulls and duplicates keys:**

- `inbox.type`
- `inbox.class`
- `operator.name`
- `groups`

**12 Click Save.**

ServiceCenter prompts you to regenerate the key.

**13 Click Yes.**

## RDBMS

On systems where ServiceCenter data is pushed to an RDBMS, you must have a database administrator make the following changes to the inbox table.

- Change the No Duplicates key to contain the following field:
  - `inbox.id`
- Change the Nulls and Duplicates key to contain the following fields:
  - `inbox.type`
  - `inbox.class`
  - `operator.name`
  - `groups`



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