Understanding the Cisco Secure ACS to Cisco ISE Migration Tool

This chapter provides information about the Cisco Secure ACS to Cisco ISE Migration Tool that is used to migrate data from a Cisco Secure ACS, Release 5.3 database to a Cisco ISE, Release 1.2, appliance.

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Cisco Secure ACS to Cisco ISE Migration Tool

The Cisco Secure ACS to Cisco ISE Migration Tool is designed to provide users who have an existing installed Cisco Secure ACS, Release 5.3 database with a way to transport data to a Cisco ISE, Release 1.2, appliance. The design of the tool addresses the inherent migration problems that result from differences in the underlying hardware platforms and systems, databases, and data schemes.

There are three steps in the migration process:

1. Exporting the Cisco Secure ACS, Release 5.3 data from its database
2. Persisting the data by using the migration tool
3. Importing the persisted data into the Cisco ISE, Release 1.2, appliance

The only supported direct migration process that uses the Cisco Secure ACS to Cisco ISE Migration Tool is from a Cisco Secure ACS, Release 5.3 system to a Cisco ISE, Release 1.2, appliance. For example, you can use the Cisco Secure ACS to Cisco ISE Migration Tool to perform the following data migration steps:

1. Export the Cisco Secure ACS, Release 5.3 data from the Cisco Secure ACS-1121 hardware appliance to a secure external server with a database.
2. Back up the Cisco Secure ACS data.
3. Reimage the Cisco Secure ACS-1121 hardware appliance, which has the same physical hardware as a Cisco ISE 3315 appliance, with Cisco ISE, Release 1.2, software.
4. Import the converted Cisco Secure ACS 5.3 data from the secure external server into the Cisco ISE, Release 1.2, appliance.
The Cisco Secure ACS to Cisco ISE Migration Tool runs on Windows-based systems, and it works by importing the Cisco Secure ACS data files, analyzing the data, and making required data modifications that are necessary for importing the data into a format that is usable by the Cisco ISE, Release 1.2 system.

The Cisco Secure ACS, Release 5.3 and Cisco ISE, Release 1.2 applications may or may not run on the same type of physical hardware. The Cisco Secure ACS-Cisco ISE Migration Tool uses the Cisco Secure ACS Programmatic Interface (PI) and the Cisco ISE representational state transfer (REST) application programming interfaces (APIs). The Cisco Secure ACS PI and the Cisco ISE REST APIs allow the Cisco Secure ACS and Cisco ISE applications to run on supported hardware platforms or VMware servers.

Because Cisco Secure ACS is considered a closed appliance, running the migration tool directly on a Cisco Secure ACS-1121 appliance is not permitted. Instead, the Cisco Secure ACS PI reads and returns the ACS configuration data in a normalized form. The Cisco ISE REST APIs perform validation and normalize the exported Cisco Secure ACS data to persist it in a form usable by Cisco ISE software.

Note

You should run the migration tool only after a fresh Cisco ISE installation or after you have reset the Cisco ISE application configuration and cleared the Cisco ISE database using the application reset-config command. Therefore, the Cisco ISE FIPS mode should not be enabled before the migration process is complete.

Software Requirements

Before running the Cisco Secure ACS to Cisco ISE Migration Tool, make sure that you have upgraded to Cisco ISE, Release 1.2, and have installed the latest patches for Cisco Secure ACS, Release 5.3.

Table 2-1 lists the minimum software requirements for the migration tool.

<table>
<thead>
<tr>
<th>Table 2-1</th>
<th>Software Requirements for the Cisco Secure ACS to Cisco ISE Migration Tool</th>
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<tbody>
<tr>
<td>Operating System</td>
<td>The Cisco Secure ACS-Cisco ISE Migration Tool runs on Windows and Linux machines. The machine should have JAVA installed on it. For more details, see “System Requirements” section on page 4-2.</td>
</tr>
<tr>
<td>Minimum disk space</td>
<td>The minimum disk space required is 1 GB. This space is required not only for the installation of the migration tool, but also because the migration tool will store the migrated data and will generate reports and logs.</td>
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<tr>
<td>Minimum RAM</td>
<td>The minimum RAM required is 2 GB. If you have about 300,000 users, 50,000 hosts, 50,000 network devices, then we recommend that you have a minimum of 2 GB of RAM.</td>
</tr>
</tbody>
</table>

Migration Tool Components

The migration tool consists of the following components:

- Data Configuration, page 2-3
- Status Reporting, page 2-3
Data Configuration

A minimal amount of configuration data is needed at the beginning of the migration process before the application proceeds to migrate the full set of configuration items. You must enter the IP address (or hostname) of the primary Cisco Secure ACS server and the Cisco ISE server, along with the administrator credentials. After you have been authenticated, the Cisco Secure ACS-Cisco ISE Migration Tool proceeds to migrate the full set of configured data items in a form similar to an upgrade. Usually, no additional operator intervention is required after the migration process starts. However, as the migration progresses, some data may not be mapped automatically between the two applications. The administrator handling the migration is notified of this type of data, which must be resolved before the migration is complete.

Status Reporting

As the migration proceeds, you can monitor the real-time migration status along with the progress of activities. In case of troubleshooting, detailed logs are available and accessible in the migration tool.

Export and Import

You can perform export and import operations individually or in sequence. Exporting and importing may take a long time and depends on the amount of data being migrated. Therefore, the migration tool periodically displays checkpoints with the status of the activity being performed. You can restart the migration process from a checkpoint in case of a failure.

You must log into the Cisco Secure ACS command-line interface and enter the following command:

<acsmachine>/admin# acs config-web-interface migration enable

Export and Data Persistence

You can start the export process after you are authenticated by the Cisco Secure ACS system and request the data be exported.

A direct upgrade from Cisco Secure ACS to Cisco ISE is not supported. The Cisco Secure ACS to Cisco ISE Migration Tool assists you if you want to uninstall Cisco Secure ACS, Release 5.3 software and reimage the physical hardware with Cisco ISE, Release 1.2 software. The migration tool persists the Cisco Secure ACS data while the reimage process is completing and before the import stage begins.

Data Analysis and Import

During the export phase, the Cisco Secure ACS to Cisco ISE Migration Tool reads and analyzes the data to confirm that it can be created correspondingly on the Cisco ISE appliance. Because the Cisco Secure ACS and Cisco ISE policy model are not the same, some of the data might not be supported by Cisco ISE. The tool reports any data issues that may require an administrator intervention at the end of the export phase.
Data Structure Mapping

Data structure mapping from Cisco Secure ACS, Release 5.3 to Cisco ISE, Release 1.2, is the process by which data objects are analyzed and validated in the migration tool during the export phase by the Cisco Secure ACS to Cisco ISE Migration Tool. For a complete list of the data structure mapping that takes place during export, see Appendix A, “Cisco Secure ACS 5.3 and Cisco ISE, Release 1.2 Data Structure Mapping”.