

ICM State Transfer

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Introduction

This document describes the state transfer mechanism, its size, and relationship with configuration and database in a Cisco Intelligent Contact Management (ICM) environment.

Prerequisites

Requirements

Cisco recommends that you have knowledge of Cisco ICM.

Components Used

The information in this document is based on Cisco ICM.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Background

The state transfer allows Cisco ICM to transfer all its internal data structures from one side to another side in a duplexed ICM configuration. If the transfer is successful, the side that receives the transfer recreates the same structures just like the side that sends the transfer, and preserves all their relationships. The state transfer goes through the local Message Delivery Service (MDS) through the private network.

The control and data flow for the sending side is:

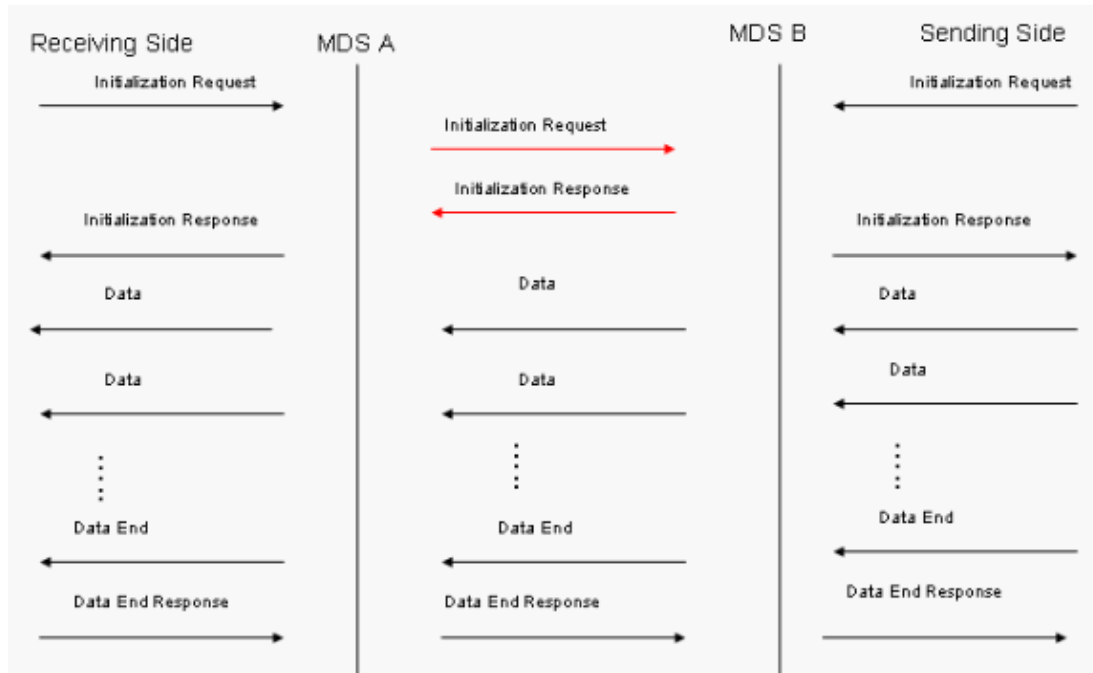
1. The process receives a message from the new process that a state transfer is required. This message must include an address to send the data and a version.
2. Create state records based on current state.
3. Deliver state records.

The control and data flow for the side that receives is:

1. Create a pipe to receive the data.
2. Send a message that a state transfer is desired. This must include the address and version.
3. Read the state records that arrive.
4. Recreate the state based on the new state records.

If the A side is the side that sends, the exchange between sides appears as Figure 1 shows.

Figure 1 State Transfer



Note: No matter if the A side or the B side is the side that sends, the MDS process on the A side always sends the initialization request, as shown by the red arrow in Figure 1.

State Transfer

The state transfer operation is done based on a per-synchronized client basis. Because it is time sensitive, the traffic for the state transfer is controlled by the Message Delivery System (MDS) process. A separate TCP/IP session is created for each client instance. ICM synchronized clients include:

- Logger
- CallRouter
- Customer Interface Controller (CIC) process
- Open Peripheral Controller (OPC) process

Some points related to the state transfer are:

- The state is essentially the collective knowledge of everything ICM knows about. The size is the amount of memory the CallRouter needs to allocate to hold this knowledge.
- The configuration portion of the ICM Logger database affects the state size.
- The ICM historical database has no impact on the state size.
- All the objects such as service, skill group, and script reside in the Logger database. The CallRouter receives the configuration from the Logger.

- When the Peripheral Gateways (PGs) and peripherals go online and scripts are executed, the CallRouter builds this knowledge about every object. The more items in the configuration, and the more real-time data there is, the larger the state size can grow.
- Issue **status** in the **rttest** utility, as shown by the A arrow in Figure 2, and the current state size, as shown by the B arrow in Figure 2.

Figure 2 State Size

```

@ Copyright 1985-2000 Microsoft Corp.

C:\Documents and Settings\Administrator>rttest /cust lab50
RTTEST status ← A
Router version:      Release 5.0 Service Release 8, Build 09894
Release Date:       09/23/2004 14:47:03

Current Time:       12/01      20:05:36
Local Time:         12/01      14:05:36 (-6.0 hr)
Router Up:          11/30      20:04:26 (24.0 hr)
Router Sync:        11/30      20:10:30 (24.0 hr) (A->B)
State size now:     744,048 bytes ← B
State size max:     745,544

```

- The maximum state size allowed is set in this registry key, as shown in Figure 3.

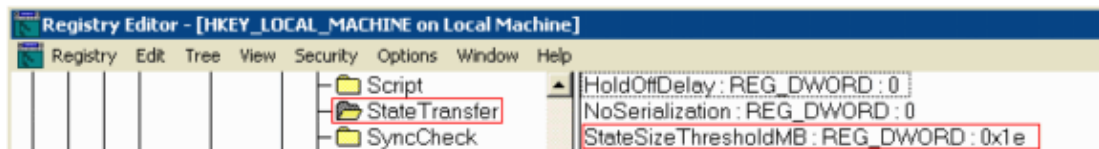
```

HKEY_LOCAL_MACHINE\SOFTWARE\Cisco System Inc.\ICM\<cust_inst>\
Router<A/B>\Router\Currentversion\Configuration\StateTransfer

```

The default size is 30 MB which serves as a threshold. If the state size exceeds the default size, the CallRouter issues an informational message. Refer to What Does the ICM Event "The router state size of 31 MB has grown beyond the alarm limit of 30 MB" Mean? for more information.

Figure 3 Maximum State Size Allowed



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Related Information

- What Does the ICM Event "The router state size of 31 MB has grown beyond the alarm limit of 30 MB" Mean?
- Technical Support – Cisco Systems

