Implementing Intelligent Customer Routing (ICR)

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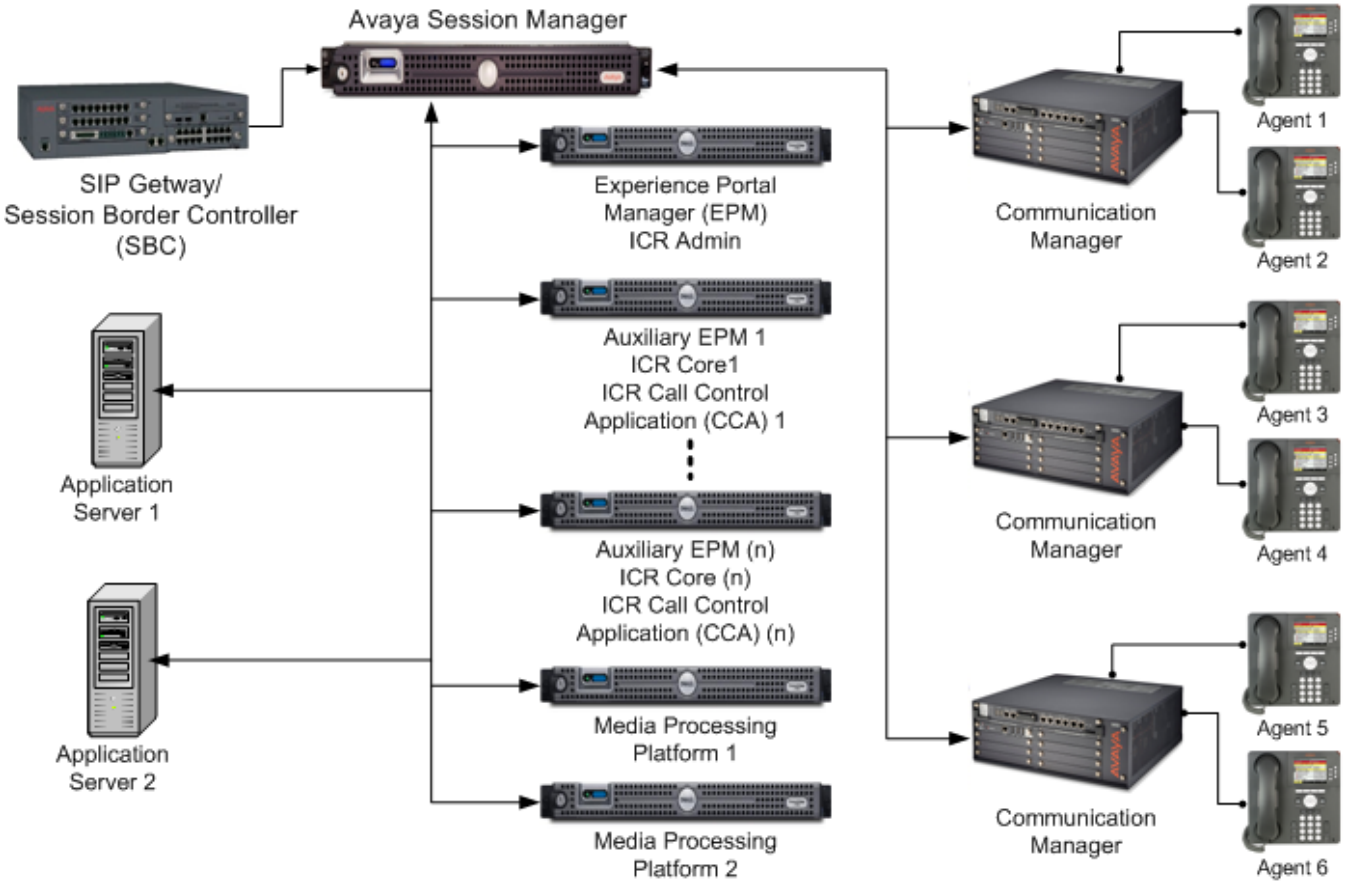
Contents

Chapter 1: Introduction

Intelligent Customer Routing (ICR) helps businesses to capitalize on the next competitive differentiator in the Customer Experience. ICR provides enhanced customer service experience by identifying and determining caller intent through simple, intelligent, customer conversations using speech and self service. ICR provides the opportunity for customers to serve themselves and, when needed, determines the most optimal route to provide live assistance to that end consumer leveraging resources enterprise wide. Avaya has unified self and assisted service into a single smart call routing solution that dynamically manages available media and IT resources while enabling a personalized high-value service from start to finish.

Following diagram gives an overall picture of how you can implement ICR in your system.



With ICR, Avaya begins the transition to the next generation contact centers by leveraging Avaya's next generation enterprise communication architecture, Avaya Aura®. This user centric architecture focuses

on any-media, any-application, and any-device from the ground up. Earlier contact center solutions have used computer telephony integration (CTI) to collaborate number of different applications and protocols into complex solutions. These solutions were difficult to deploy, operate, and support. ICR removes the complexity, leveraging Session Initiation Protocol (SIP) for standards based integration and delivery of information or contact to any resource within or external to the enterprise.

As soon as a call arrives, a customer can be greeted intelligently based on business insights. While customers are waiting for live agents, Intelligent Customer Routing can present personalized up-sell or cross-sell messages, call-back options, and even opt-in services to pro-actively notify customers of transaction status before the call even occupies resources on an ACD.

For example:

- Determine if this customer has talked to anyone in the past regarding their need and if the customers would like to be connected to the same resource.
- Gather more information about a caller based on a request; location of home purchase for which the caller need a loan, existing loan number, and an order number.
- Offer an opportunity only to premium customers (and tell the customers that the opportunity is specific for them as highly valued customers) to pre-register for the service when the service becomes available.
- Ask customers about their experience with a previous purchase (could be a tool, a cell phone, a toaster, or a travel experience). Based on that feedback – react.
- Reference customers to a local help desk that will offer configuration and assistance free of charge. Send them an e-mail with a quick tips guide.

Benefits

Following are the benefits of using Avaya Intelligent Customer Routing:

- Manage calls faster and more intelligently, to enhance customer service experience and increase customer loyalty.
- Conduct productive or business useful activities while the caller is in queue. Calls are initially delivered to a portal and routed to an ACD only when agent assistance is required. Self-service no longer consumes ACD resources or requires Interactive Voice Response (IVR) agent licenses.
- Keep your existing agent endpoints, call-routing systems and other resources, thereby preserving existing investments.
- Lower ownership costs by saving money on deployment and maintenance due to streamlined management and improved call distribution.
- Scale beyond the capacity limitations of a single Automatic Call Distribution (ACD). Avaya ICR is applicable to both single site and multi site ACD customers.

- Disaster Management: When an ACD is down, the calls queued to that ACD are not lost, ICR re-queues the call to other available ACDs without the knowledge of the customer.
- Reduce the complexity of administering a solution. This includes Best Service Routing (BSR) as well as the self service and Wait Treatment Applications (WTA). You can perform BSR administration from a single console. This helps in reducing code complex vectors.
- Information transport is through Session Initiation Protocol (SIP). Leveraging the power of SIP, Avaya ICR lets customers connect with agents and subject experts anywhere in the enterprise.
- Application scripting is based on Voice XML (VXML) and Call Control XML (CCXML) standards and is consolidated onto a single, industry-standard, Eclipse-based application development environment called the Avaya Aura® Orchestration Designer.

Features

Intelligent Customer Routing or ICR provides features to efficiently handle customer calls for an organization. In ICR, calls are either completely served through self service applications or intelligently routed to a relevant call center across applicable geographic locations based on the best available source of real-time data.

You can use the following features to provide the necessary self service and routing:

Self Service First using Avaya Aura® Experience Portal

Self Service first is provided through Avaya Aura® Experience Portal as the first point of access to an organization. Calls connect to a Avaya Aura® Experience Portal application prior to connecting an Automatic Call Distribution (ACD).

Intelligent Routing

In a contact center, agents or experts are the most valuable and most expensive resources. Therefore organizations must effectively utilize agents or experts.

Using Avaya Aura® Experience Portal as the call control point, the Intelligent Customer Routing solution selects among a group of contact center locations and routes the caller to the most optimal contact center and the best-suited agent at that time. With the Best Service Routing (BSR) infrastructure ICR locates the best location for a call based on the shortest queue and skill availability.

ICR also has the ability to self service customers or place a virtual call, parked it on the ACD, and provide an enhanced wait treatment.

Enhanced or Advanced Wait Treatment

In ICR, while a call is queued to Communication Manager, an advanced wait treatment application is played for caller. This enables self service or predictive offers to be provided

while a call is in queue awaiting an agent to become available. This queue time can be used for activities such as:

- Information Gathering – gathers additional information necessary to provide to an agent upon call delivery.
- Issue resolution – provides information to, or gathers information from a customer in the interest of resolving an issue (zip code needed for order shipment).
- Up sell – offer customers opportunities based on previous activities or purchases or play special messages regarding new promotions as applicable to a customers profile.
- Opt-in Services – provide customer ability to sign up for new value added services such as SMS messages with bill due dates and amounts, and shipment information.
- Call back assist – provide call back options for a customer based on estimated (or predicted) queue wait times.
- The wait treatments can be configured to play based on the length of the wait time

When an agent becomes available, the caller is connected to the agent.

Reporting

Avaya ICR provides real-time monitoring and historical reporting.

In real-time monitoring, you can view the application and queued call status in real-time. In the status, you can view the calls for each applications, call for a particular skill, or calls for a particular call center.

In the historical reporting, you can view the details of calls that ICR Call Control Application (CCA) sessions handled and processed. The report includes information from the time a call arrives in the ICR CCA session up to the call exit from the ICR CCA session.

ICR Pluggable Data Connector (PDC)

ICR Plugable Data Connector (PDC) is a connector between Self Service Application (SSA) and ICR Core.

ICR PDC is built to integrate ICR into Avaya Aura® Orchestration Designer. ICR PDC is a generic connector, which an application developer can use without knowledge of call centers and ICR Core. The purpose of ICR PDC is to provide a SIP URI, which is the routing destination for a skill.

Sample Applications

If you wish to use sample templates to start definition of segmentation and wait treatment, Avaya ICR provides the following sample Orchestration Designer VXML applications to demonstrate how caller segmentation, wait treatment, and self-service applications can be incorporated into an ICR application. These applications are reusable templates that can be further customized to meet customer scenarios.

- SSA - Self Service Application
- WTA - Wait Treatment Application
- EHA - Error Handling application

Avaya Aura® Experience Portal integration

Seamless integration with Avaya Aura® Experience Portal for:

- Administration, Configuration, Management, Serviceability and Licensing.
- User management and assigning ICR specific roles to users.
- Monitor alarms and different types of logs like audit logs, information logs, and error logs.
- Backup and restore operations.

Components

The ICR architecture consists of the following three components:

- ICR Admin on page 13
- ICR Core on page 14
- ICR Call Control Application (CCA) on page 14
- ICR Pluggable Data Connector (PDC) on page 14

ICR Admin

ICR Admin provides configuration and administration of:

- ICR components, such as core, skills, VDNs, call centers, and business hours and holidays. For each component, you can access the corresponding Web page and configure the associated parameters for that component. ICR Core uses call centre, skill, and VDN information to identify the best resource available for a call.
- ICR applications, such as Self Service Application (SSA), Wait Treatment Applications (WTAs), Error Handling Applications (EHAs), and Non Business Hours Application.
- ICR reports, such as standard report for Call Control Application (CCA) sessions.
- ICR application and queued calls
- ICR licenses for core and reports.
- ICR logs, such as audit logs, alarms and events.
- ICR user roles, such as ICR administration and ICR reporting.

In a single system setup or a multisystem setup, ICR Admin is deployed on a primary Experience Portal Manager (EPM) system.

ICR Core

ICR Core routes the calls to the best resource available. ICR Core consists of a skill selection module called Best Service Routing (BSR) to route calls to the Communication Manager (CM). BSR module utilizes Avaya's Vector capability that uses Expert Agent Selection (EAS) for making routing decisions and provides the best location or skilled agent to which the call can be queued.

In a single system setup, ICR Core is deployed on a primary Experience Portal Manager (EPM) system and in a multisystem setup, ICR Core is either deployed on an auxiliary Experience Portal Manager (EPM) system or on a standalone system.

ICR Call Control Application (CCA)

Call Control Application (CCA) is a CCXML application that coordinates all the call activities, move calls between dialogs, and queue calls at a contact center. When a call arrives, ICR CCA answers the call and launches the Self Service Application (SSA). The SSA handles the call and if the caller requires additional information with the self services, CCA launches the Wait Treatment Application (WTA) and a call is queued in the call center for an agent. The CCA re-queues a call to a different CM in case of a CM failure.

The Error Handling Application (EHA) handles errors in a call flow.

ICR Applications are Orchestration Designer based application. ICR provides following sample Application:

- SSA: Self service application
- WTA: Wait Treatment application
- EHA: Error Handling application

You can further customize the above sample applications according to your requirements.

In a single system setup, ICR CCA is deployed on a primary Experience Portal Manager (EPM) system and in a multisystem setup, ICR CCA is either deployed on an auxiliary Experience Portal Manager (EPM) system or on a standalone system.

ICR Pluggable Data Connector (PDC)

ICR Pluggable Data Connector (PDC) is a connector between Self Service Application (SSA) and ICR Core. ICR PDC is built to integrate into Orchestration Designer. ICR PDC is a generic connector which an application developer can use without knowledge of call centers and ICR Core. The purpose of ICR PDC is to provide a SIP URI, which is the routing destination for a skill.

ICR PDC also does the load balancing of skill selection requests that arrives across multiple ICR Cores.

Chapter 2: Deployment Scenarios for ICR

Deploying ICR

You can deploy the ICR components; ICR Core and ICR CCA either on a primary or an auxiliary Experience Portal Manager system or on a standalone system. However, you must deploy the ICR Admin component on a primary Experience Portal Manager system. Based on the scalability, load balancing and failover requirement, you can create multiple instances of ICR Core and ICR CCA.

Host the ICR Core and ICR CCA on the Tomcat Application server provided with the installer.

You can deploy sample ICR VXML applications along with ICR PDC on an application server provided by a customer. You can also change the sample VXML application according to your requirements.

ICR deployment models

Single system setup

In a single system setup, deploy ICR components, such as ICR Admin, ICR Core, and ICR CCA on a primary Experience Portal Manager system and deploy ICR Applications on the same system or on another application server.

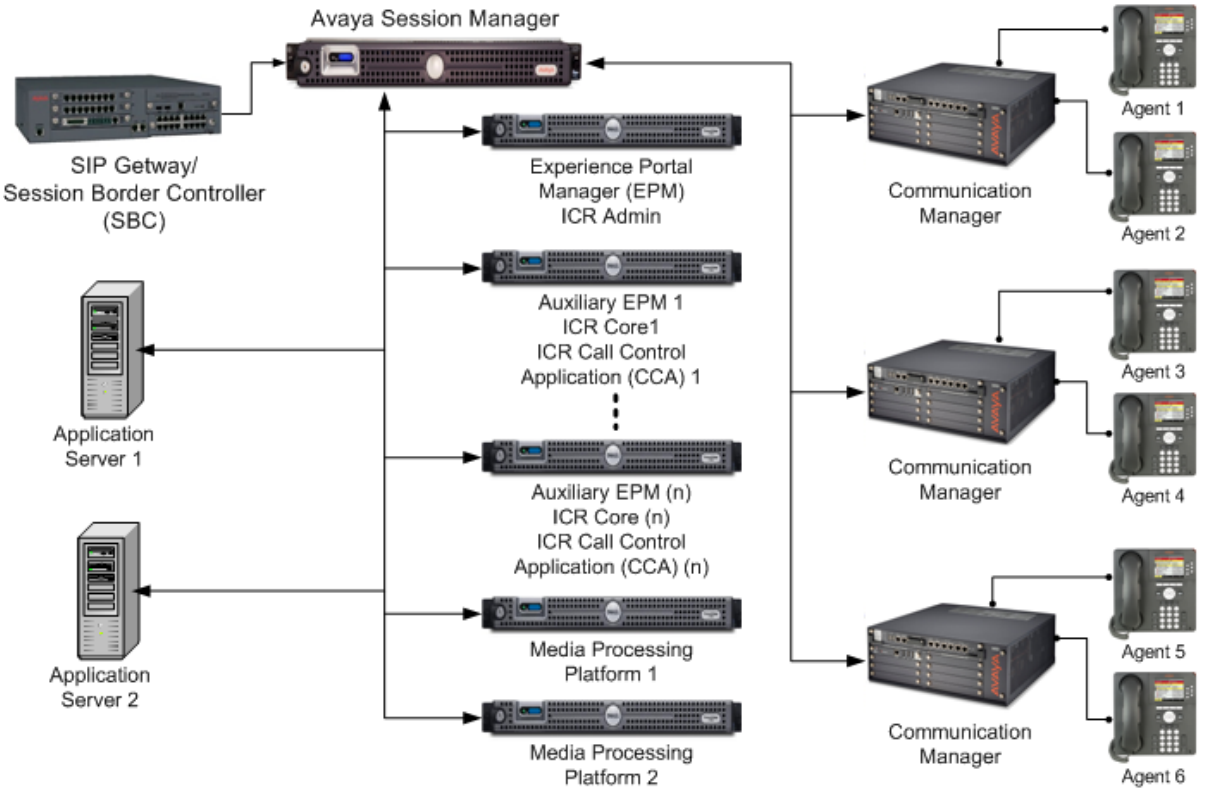
Multisystem setup

In a multisystem setup, deploy ICR component, such as ICR Admin on a Primary Experience Portal Manager system and deploy ICR Core and ICR CCA on one or more auxiliary Experience Portal Manager systems or on a standalone system.

Deploying ICR in the single site contact center environment

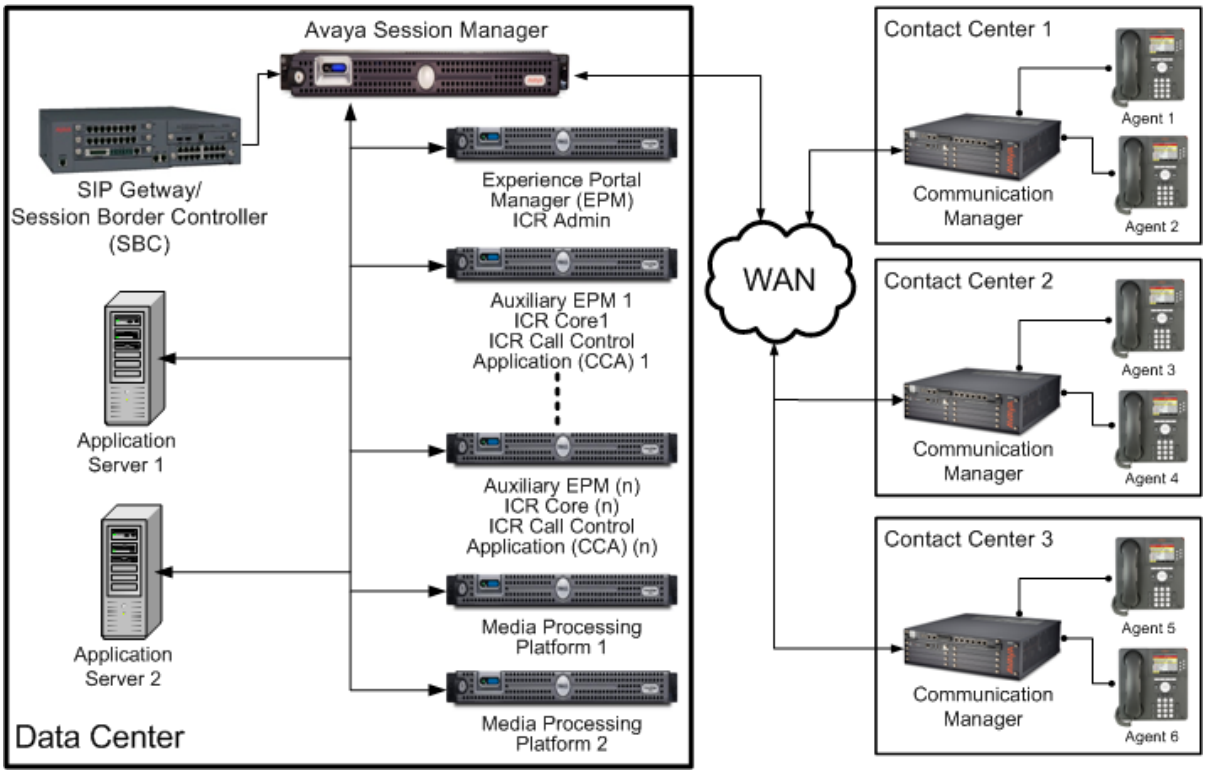
Single site contact center model consist of:

- SIP gateway or Session Border Controller (SBC)
- Session Manager
- Experience Portal Manager components
- ICR components
- One or more Communication Manager in one site



Deploying ICR in the single data center and multiple contact centers environment

A single data center model with multiple contact centers consist of a single data center having a common ingress point for all calls arriving in the system. This data center will comprise of SIP gateway or Session Border Controller (SBC), Session Manager, Experience Portal Manager, ICR components hosted in one place. There will be multiple contact centers with multiple Communication Manager outside the data center.



Deploying ICR in the multiple data centers and multiple contact centers environment

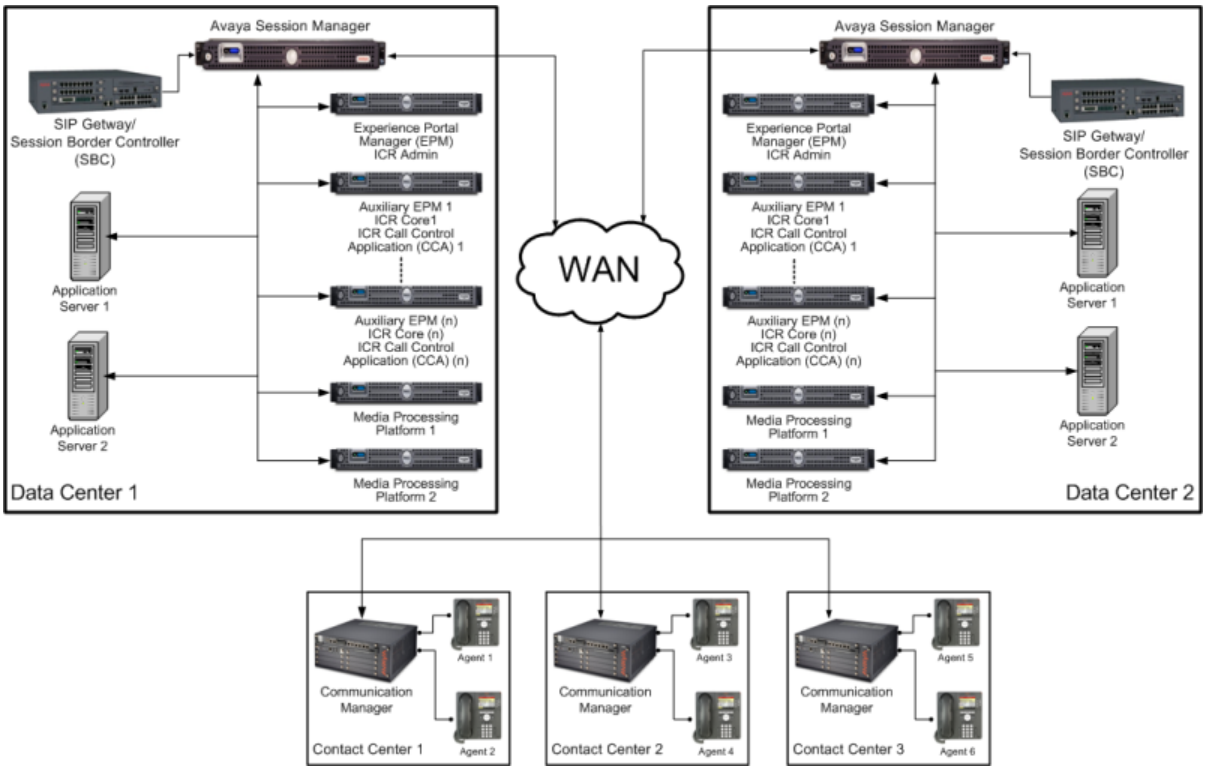
In a multiple data center model, multiple contact centers consists of each datacenter having ingress point for calls arriving in their system. These data center will comprise of SIP gateway or Session Border Controller (SBC), Session Manager, Experience Portal Manager, ICR

components hosted in one place. There will be multiple contact centers with multiple Communication Manager outside data centers. The Avaya session manager across data centers will leverage distributed Session Manager model.

ICR Monitor and Standard Reports will be available in Experience Portal Manager using centralized reporting database.

Note:

For the configuration of external reporting database, refer to the Administration guide of Experience Portal Manager, available at the Avaya support site: http://support.avaya.com.



Chapter 3: Installing Intelligent Customer Routing (ICR)

Prerequisites for installing ICR

ICR is a managed application of Avaya Aura® Experience Portal. Therefore, hardware and software specifications applicable for Avaya Aura® Experience Portal are also applicable for ICR. However, following are the additional prerequisites for ICR.

Software prerequisites

- Avaya Aura® Communication Manager 5.2.1 Service Pack 8 or later, 6.0.1 Service pack 2 or later, or 6.2 Service Pack 2.01
- Avaya Aura® Session Manager 5.2, 6.1, or 6.2
- Avaya Aura® Experience Portal 6.0 Service Pack 3
- Application Server
- Speech Server

Hardware prerequisites

- RAM: 4-GB or more
- SIP Gateways or Session Border Controller (SBC)

Note:

For more information about the hardware requirements, see the *Minimum (Linux) server machine hardware requirements* topic in the Avaya Aura® Experience Portal documentation.

Operating system prerequisites

- Disable the firewall or antivirus software running on the system.
- Set `selinux` to the permissive mode. For more information, see the Linux operating system documentation.
- Synchronize the time between all the Avaya Aura® Experience Portal and ICR systems.
- Use the new `ssh` session for installing ICR and not the same session used for installing Avaya Aura® Experience Portal.

About ICR installation

ICR consists of the following components:

- ICR Admin
- ICR Call Control Application (CCA)
- ICR Core

To install the ICR components, run the ICR installer on a single system or install individual components on multiple systems.

Note:

When you install ICR without installing the ICR licenses, the License page of Avaya Aura® Experience Portal displays the license count of ICR Core and ICR Reporting as 1. This count indicates that you can use ICR for an initial trial period of 30 days. After the trial period, you must install the ICR license to continue using ICR. For more information about installing ICR licenses, see the ICR Administration guide.

Single system installation

You can install all the ICR components on a single system. However, you must install the ICR Admin component on the primary Experience Portal Manager system.

Note:

In the single system installation of ICR, you must configure different SIP listener ports for Media Processing Platform (MPP) and ICR Core. For ICR Core, you can modify the `ICRSipTCPPort` property in the `icrcore.properties` file available in the *`$AVAYA_ICRCORE_HOME`*`/tomcat/conf` directory.

Multisystem installation

You can install ICR components separately on multiple systems.

Following are the system requirements for multisystem installation:

- ICR Admin

  You must install this component on a primary Experience Portal Manager system.

- ICR CCA and ICR Core

  You can install these components on an auxiliary Experience Portal Manager system or a standalone Linux system.

  Note:

  If you are installing ICR Core or ICR CCA on a standalone Redhat Enterprise Linux system, follow the prerequisites mentioned in the *Customer-provided operating system*

installation chapter of the *Implementing Avaya Aura® Experience Portal on multiple servers guide*.

Important:

If you install ICR CCA and ICR Core on a standalone Linux system, the remote access using Secured Access Link (SAL) is not supported.

Silent installation

You can install ICR components in a silent mode. Silent installation is useful when you know the required install settings and you do not want to change the settings. Install ICR in a silent mode only when you know the install settings correctly.

Note:

After you complete installing the ICR components, you must configure the installed ICR components. For more information about configuring ICR components, see the *Administering Intelligent Customer Routing* guide.

Installing ICR Admin

Before you begin

- Check the prerequisites in Prerequisites for installing ICR on page 21.
- If you are installing Avaya Aura® Experience Portal for the first time, see the *Avaya Aura® Experience Portal* documentation on the Avaya support site at: http://support.avaya.com.

Procedure

1. Mount the ICR installation media on the primary Experience Portal Manager system where you want to install ICR Admin.

   For information about mounting the installation media, see Mounting the ICR media on page 145.
2. Type `./install_icr.bin` and press `Enter` to run the installer.
3. On the `Introduction` screen, press `Enter`.
4. On the `License` screen, press `Enter`.
   The system displays the message: `Do you accept the terms of this license agreement?`

   Note:

   Press `Enter` several times to view the complete license page.
5. Type `Y`, and press `Enter` to accept the license agreement.

6. On the `Choose Install Path` screen, press `Enter` to select the default path for installation.

   By default, the installer displays the path as: `/opt/Avaya/ICR`. However, you can provide a new absolute directory path.

7. On the `Choose Product Features` screen, the system displays the message: `Please choose the Features to be installed by this installer`.

   Tip:

   - By default, the system does not select any component. You can select or clear the components by entering a choice.
   - To go back to the previous page, type `back` and press `Enter`.
   - To select or clear a feature, enter the feature number separated by a comma.
   - To cancel the installation at any time, type `quit` and press `Enter`.

8. Type `1`, and press `Enter` to select ICR Admin.

   The system displays *[X]* besides the selected feature name.

9. Press `Enter` to continue.
   The system displays the `Version Confirmation` screen with the information about the component that you are installing. The information includes, the name of the component, the component version if the component is already installed, the new version of the component, and the installation type.

   Note:

   When you install the ICR component, the **Install Type** column displays the installation type as **Full Install**. But, when you upgrade the ICR component, the **Install Type** column displays the installation type as **Upgrade**.

```
================================================================================
Version Confirmation
--------------------

For the components to be installed, confirm the version numbers and the
install type. For upgrades, most data and configuration will be preserved.
For full installs, however, existing data and configuration will be
overwritten.

Please proceed to accept, or type "back" to return to the previous dialog
to modify which components to install.

Component:    Installed Version:    New Version:    Install Type:
ICRAdmin        Not Installed        6.0.3.0.x    Full Install

Continue with installation? (Y/N):
================================================================================
```

10. Type `Y`, and press `Enter` to continue.

The installer checks the prerequisites required for ICR Admin and displays the summary similar to the following:

```
================================================================================
ICR Admin Prerequisite Check status
-----------------------------------

Prerequisite                 Expected result             Found
Is EPM installed?            YES                         YES
Is EPM Version supported?    6.x                         6.0.3.0.x


PRESS <ENTER> TO CONTINUE:
================================================================================
```

11. Press `Enter` to continue.
    To install ICR Admin, the installer must stop the Experience Portal Manager service. Therefore, the ICR Admin installer displays the `Stopping EPM service` screen to confirm stopping of the Experience Portal Manager service.

    The default option is Continue.

```
================================================================================
Stopping EPM service
--------------------

Installer will now proceed to stop Experience Portal Management service.

Do you want to continue?

  ->1- Continue
    2- Exit

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
================================================================================
```

12. Press `Enter` to continue, or type `2` and press `Enter` to exit the installer.
    The system displays the `Pre-Installation Summary` screen with the summary similar to the following:

```
================================================================================
Pre-Installation Summary
------------------------

Please Review the Following Before Continuing:

Product Name:
    ICR

Install Folder:
    /opt/Avaya/ICR

Product Features:
    ICRAdmin

Disk Space Information (for Installation Target):
    Required:  40,492,255 bytes
    Available: 1,264,046,080 bytes

PRESS <ENTER> TO CONTINUE:
================================================================================
```

13. Press `Enter` to continue.

    The installer starts installing ICR Admin.

    While installing ICR Admin, the ICR Admin installer displays the `Starting EPM service` screen to confirm about starting the Experience Portal Manager service.

```
========================================================================
Starting EPM service
--------------------

Installer will now proceed to start EPM and dependent services. This
operation will take some time.

ICRAdmin logs will be created at

/opt/Avaya/ICR/ICRAdmin/logs/ICRAdmin_InstallLog.log and
/opt/Avaya/ICR/ICRAdmin/logs/icr_install_script.log.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
========================================================================
```

    Note:

    By default, the installer creates the install logs of ICR Admin in the `ICRAdmin_InstallLog.log` and `admin_install_script.log` files located in the `$AVAYA_ICRADMIN_HOME/logs` directory. After the installation, check the log files for any errors.

    The `$AVAYA_ICRAdmin_HOME` variable is available in a new Linux session and not in the same installation session.

14. Press `Enter` to continue.

    The installer installs ICR Admin and displays a message for successful installation.

15. Press `Enter` to exit the installer.

Next steps

Verify that the Experience Portal Manager service is running:

```
service vpms status
```

Installing ICR CCA

Before you begin

Check the prerequisites in Prerequisites for installing ICR on page 21.

Procedure

1. Mount the ICR installation media on the system where you want to install ICR CCA.

   For information about mounting the installation media, see Mounting the ICR media on page 145.

2. Type `./install_icr.bin` and press `Enter` to run the installer.
3. On the `Introduction` screen, press `Enter`.
4. On the `License` screen, press `Enter`.
   The system displays the message: `Do you accept the terms of this license agreement?`

   Note:

   Press `Enter` several times to view the complete license page.

5. Type `Y`, and press `Enter` to accept the license agreement.
6. On the `Choose Install Path` screen, press `Enter` to select the default path for installation.

   By default, the installer displays the path as: `/opt/Avaya/ICR`. However, you can provide a new absolute directory path.

7. On the `Choose Product Features` screen, the system displays the message: `Please choose the Features to be installed by this installer`.

   Tip:

   - By default, the system does not select any component. You can select or clear the components by entering a choice.
   - To go back to the previous page, type `back` and press `Enter`.
   - To select or clear a feature, enter the feature number separated by a comma.
   - To cancel the installation at any time, type `quit` and press `Enter`.

8. Type `2`, and press `Enter` to select ICR CCA.

   The system displays *[X]* besides the selected feature name.

9. Press `Enter` to continue.
   The system displays the `Version Confirmation` screen with the information about the component that you are installing. The information includes, the name of the component, the component version if the component is already installed, the new version of the component, and the installation type.

Note:

When you install the ICR component, the **Install Type** column displays the installation type as **Full Install**. But, when you upgrade the ICR component, the **Install Type** column displays the installation type as **Upgrade**.

```
================================================================================
Version Confirmation
--------------------

For the components to be installed, confirm the version numbers and the
install type. For upgrades, most data and configuration will be preserved.
For full installs, however, existing data and configuration will be
overwritten.

Please proceed to accept, or type "back" to return to the previous dialog
to modify which components to install.

Component:       Installed Version:       New Version:       Install Type:
ICRCCA            Not Installed            6.0.3.0.x        Full Install

Continue with installation? (Y/N):
================================================================================
```

10. Type `Y`, and press `Enter` to continue.
    The installer checks the prerequisites required for ICR CCA and displays the summary similar to the following:

```
================================================================================
ICR CCA/ICR Core Prerequisite Check status
------------------------------------------

Prerequisite         Expected result            Found
OS & Version:       AVAYA Linux/RHEL6.x       Red Hat Enterprise Linux  6.0
Memory:            4 GB                 4.021 GB


PRESS <ENTER> TO CONTINUE:
================================================================================
```

11. Press `Enter` to continue.
    The system displays the `Primary EPM Server` screen, which prompts: `EPM IP ADDRESS (DEFAULT: XXX.XXX.XXX.XXX):`.
    By default the system displays the IP address of the local system.
12. Type the IP address of the primary Experience Portal Manager system, and press `Enter`.
    The system displays the `Pre-Installation Summary` screen, which displays the summary similar to the following:

```
================================================================================
Pre-Installation Summary
------------------------

Please Review the Following Before Continuing:

Product Name:
    ICR

Install Folder:
```

```
    /opt/Avaya/ICR

Product Features:
    ICRCCA

Disk Space Information (for Installation Target):
    Required:  275,603,020 bytes
    Available: 1,929,621,504 bytes

PRESS ENTER TO CONTINUE:
================================================================================
```

13. Press `Enter` to continue.

    The installer starts installing ICR CCA.

    While installing ICR CCA, the ICR CCA installer displays the `Starting ICRCCA service` screen to confirm about starting the ICR CCA service.

```
================================================================================
Starting ICRCCA service...
--------------------------

Installer will now proceed to start ICRCCA and dependent services. This
operation will take some time.

ICRCCA logs will be created at

/opt/Avaya/ICR/ICRCCA/logs/ICRCCA_InstallLog.log and
/opt/Avaya/ICR/ICRCCA/logs/cca_install_script.log.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
================================================================================
```

    Note:

    By default, ICR creates the install logs of ICR CCA in the `ICRCCA_InstallLog.log` and `cca_install_script.log` files located in the *$AVAYA_ICRCCA_HOME*`/logs` directory. After installation, check the log files for any errors.

    The *$AVAYA_ICRCCA_HOME* variable is available in a new Linux session and not in the same installation session.

14. Press `Enter` to continue.

    The installer installs ICR CCA and displays a message to confirm the successful installation.

15. Press `Enter` to exit the installer.

Next steps

Verify that the ICR CCA service is running:

```
service icrcca status
```

Installing ICR Core

Before you begin

Check the prerequisites in Prerequisites for installing ICR on page 21.

Procedure

1. Mount the ICR installation media on the system where you want to install ICR Core.

   For information about mounting the installation media, see Mounting the ICR media on page 145.

2. Type `./install_icr.bin` and press `Enter` to run the installer.
3. On the `Introduction` screen, press `Enter`.
4. On the `License` screen, press `Enter`.

   The system displays the message: `Do you accept the terms of this license agreement?`

   Note:

   Press `Enter` several times to view the complete license page.

5. Type `Y`, and press `Enter` to accept the license agreement.
6. On the `Choose Install Path` screen, press `Enter` to select the default path for installation.

   By default, the installer displays the path as: `/opt/Avaya/ICR`. However, you can provide a new absolute directory path.

7. On the `Choose Product Features` screen, the system displays the message: `Please choose the Features to be installed by this installer.`

   Tip:

   - By default, the system does not select any component. You can select or clear the components by entering a choice.
   - To go back to the previous page, type `back` and press `Enter`.
   - To select or clear a feature, enter the feature number separated by a comma.
   - To cancel the installation at any time, type `quit` and press `Enter`.

8. Type `3`, and press `Enter` to select ICR Core.

The system displays *[X]* besides the selected feature name.

9. Press `Enter` to continue.
   The system displays the `Version Confirmation` screen with the information about the component that you are installing. The information includes, the name of the component, the component version if the component is already installed, the new version of the component, and the installation type.

   Note:

   When you install the ICR component, the **Install Type** column displays the installation type as **Full Install**. But, when you upgrade the ICR component, the **Install Type** column displays the installation type as **Upgrade**.

```
================================================================================
Version Confirmation
--------------------

For the components to be installed, confirm the version numbers and the
install type. For upgrades, most data and configuration will be preserved.
For full installs, however, existing data and configuration will be
overwritten.

Please proceed to accept, or type "back" to return to the previous dialog
to modify which components to install.

Component:       Installed Version:       New Version:       Install Type:
ICRCore            Not Installed            6.0.3.0.x        Full Install

Continue with installation? (Y/N):
================================================================================
```

10. Type `Y`, and press `Enter` to continue.
    The installer checks the prerequisites required for ICR Core, and displays the summary similar to the following:

```
================================================================================
ICR CCA/ICR Core Prerequisite Check status
------------------------------------------

Prerequisite         Expected result            Found
OS & Version:       AVAYA Linux/RHEL6.x       Red Hat Enterprise Linux  6.0
Memory:            4 GB                4.021 GB

PRESS <ENTER> TO CONTINUE:
================================================================================
```

11. Press `Enter` to continue.
    The system displays the `Primary EPM Server` screen, which prompts: `EPM IP ADDRESS (DEFAULT: XXX.XXX.XXX.XXX):`.

    By default the system displays the IP address of the local system.

12. Type the IP address of the primary Experience Portal Manager system, and press `Enter`.

13. On the `EPM Product ID` screen, type the correct product ID of Avaya Aura® Experience Portal.

You can find the product ID of Avaya Aura® Experience Portal on the System Monitor page.

a. From the Experience Portal Manager main menu in the left navigation pane, click **Real-Time Monitoring** > **System Monitor**.
b. In the **Server Name** column, click the **EPM** link.
   In the **General Information** area, the **Product ID** field displays the product ID of Avaya Aura® Experience Portal.

14. Press `Enter` to continue.
    The system displays the `Pre-Installation Summary` screen, which displays the summary similar to the following:

```
================================================================================
Pre-Installation Summary
------------------------

Please Review the Following Before Continuing:

Product Name:
    ICR

Install Folder:
    /opt/Avaya/ICR

Product Features:
    ICRCore

Disk Space Information (for Installation Target):
    Required:  427,953,696 bytes
    Available: 2,074,517,504 bytes

PRESS ENTER TO CONTINUE:
================================================================================
```

15. Press `Enter` to continue.
    The installer starts installing ICR Core.

    While installing ICR Core, the ICR Core installer displays the `Starting ICRCore service` screen to confirm the start of the ICR Core service.

```
================================================================================
Starting ICRCore service...
---------------------------

Installer will now proceed to start ICRCore and dependent services. This
operation will take some time.

ICRCore logs will be created at

/opt/Avaya/ICR/ICRCore/tomcat/logs folder.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
================================================================================
```

Note:

By default, ICR creates the Core logs in the *$AVAYA_ICRCORE_HOME*/tomcat/logs directory and the installer log file ICRCore_InstallLog.log in the

$AVAYA_ICRCORE_HOME directory. After installation, check the log files for any errors.

The *$AVAYA_ICRCORE_HOME* variable is available in a new Linux session and not in the same installation session.

16. Press `Enter` to continue.

    The installer installs ICR Core and displays a message for successful installation.

17. Press `Enter` to exit the installer.

Next steps

1. Verify that the `httpd` service is configured for an auto start.

   Enter the following command to check the httpd service auto start status:

   chkconfig `httpd -- list`

   Command output:

   ```
   httpd      0:off   1:off   2:on    3:on    4:on    5:on    6:off
   ```

   In the command output, check that the levels 2 to 5 display the status as *on*.

   If the status for the levels 2 to 5 is *off*, configure the `httpd` service for auto start using the following command:

   chkconfig `httpd on`

2. Reboot the system and verify that the ICR Core services are running:

   service `icrcore status`

   service `terracottaSrv status`

   service `icrwebservice status`

   service `httpd status`

Installing ICR on a single system

Before you begin

Check the prerequisites in Prerequisites for installing ICR on page 21.

About this task

To install ICR on a single system, install the following ICR components on a single system:

- ICR Admin
- ICR Core
- ICR CCA

You can install all the ICR components on the single Avaya Aura® Experience Portal system, where primary Experience Portal Manager is running.

Note:

- Running all the ICR components on single system can have an impact on ICR performance. Therefore, you must install ICR on a single system in a development environment.
- When installing ICR on a single system, you must configure different SIP listener ports for Media Processing Platform (MPP) and ICR Core. For ICR Core, you can modify the `ICRSipTCPPort` property in the `icrcore.properties` file located in the *`$AVAYA_ICRCORE_HOME`*`/tomcat/conf` directory. For MPP, you can modify the SIP listener ports on the VoIP Connection page of Experience Portal Manager.
- On the Avaya Session Manager system, create the SIP entity link only for MPP and mark that link as trusted. Do not create a separate SIP entity link for ICR Core because ICR Core and MPP resides on a single system.

Procedure

1. Mount the ICR installation media on the primary Experience Portal Manager system where you want to install all the ICR components.

   For information about mounting the installation media, see Mounting the ICR media on page 145.

2. Type `./install_icr.bin`, and press `Enter` to run the installer.
3. On the `Introduction` screen, press `Enter`.
4. On the `License` screen, press `Enter`.

   The system displays the message: `Do you accept the terms of this license agreement?`

   Note:

   Press `Enter` several times to view the complete license page.

5. Type `Y`, and press `Enter` to accept the license agreement.
6. On the `Choose Product Features` screen, press `Enter` to select the default path for installation.

   By default, the installer displays the path as: `/opt/Avaya/ICR`. However, you can provide a new absolute directory path.

7. On the `Choose Product Features` screen, the system displays the message: `Please choose the Features to be installed by this installer.`

   Tip:

   - By default, the system does not select any component. You can select or clear the components by entering a choice.
   - To go back to the previous page, type `back` and press `Enter`.
   - To select or clear a feature, enter the number for the feature separated by a comma.
   - To cancel the installation at any time, type `quit` and press `Enter`.

8. Type `1,2,3`, and press `Enter` to select ICR Admin, ICR CCA, and ICR Core application.
   The system displays *[X]* besides the selected feature name.
9. Press `Enter` to continue.
   The system displays the `Version Confirmation` screen with the information about the component that you are installing. The information includes, the name of the component, the component version if the component is already installed, the new version of the component, and the installation type.

   Note:

   When you install the ICR component, the **Install Type** column displays the installation type as **Full Install**. But, when you upgrade the ICR component, the **Install Type** column displays the installation type as **Upgrade**.

```
===============================================================================
Version Confirmation
--------------------

For the components to be installed, confirm the version numbers and the
install type. For upgrades, most data and configuration will be preserved.
For full installs, however, existing data and configuration will be
overwritten.

Please proceed to accept, or type "back" to return to the previous dialog
to modify which components to install.

Component:    Installed Version:    New Version:        Install Type:
ICRAdmin    Not Installed            6.0.3.0.x        Full Install
ICRCCA        Not Installed        6.0.3.0.x        Full Install
ICRCore        Not Installed        6.0.3.0.x        Full Install

Continue with installation? (Y/N):
===============================================================================
```

10. Type `Y`, and press `Enter` to continue.
    The installer checks the prerequisites required for ICR Admin, and displays the summary similar to the following:

```
===============================================================================
ICR Admin Prerequisite Check status
```

```
----------------------------------

Prerequisite                    Expected result                Found
Is EPM installed?                YES                     YES
Is EPM Version supported?            6.x                     6.0.3.0.x

PRESS <ENTER> TO CONTINUE:
================================================================================
```

11. Press `Enter` to continue.
    To install ICR Admin, the installer must stop the Experience Portal Manager service. Therefore, the ICR Admin installer displays the `Stopping EPM service` screen to confirm stopping of the Experience Portal Manager service.

    The default option is Continue.

```
================================================================================
Stopping EPM service
--------------------

Installer will now proceed to stop Experience Portal Management service.

Do you want to continue?

  ->1- Continue
    2- Exit

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
================================================================================
```

12. Press `Enter` to continue or type `2`, and press `Enter` to exit the installer.
    The installer checks for prerequisites before installing ICR Core and ICR CCA, and shows the summary similar to the following:

```
================================================================================
ICR CCA/ICR Core Prerequisite Check status
------------------------------------------

Prerequisite        Expected result            Found
OS & Version:       AVAYA Linux/RHEL6.x       Red Hat Enterprise Linux  6.0
Memory:            4 GB                4.152 GB

PRESS <ENTER> TO CONTINUE:
================================================================================
```

13. Press `Enter` to continue.
    The system displays the `Primary EPM Server` screen, which prompts: `EPM IP ADDRESS (DEFAULT: XXX.XXX.XXX.XXX):`.

    By default the system displays the IP address of the local system.

14. Type the IP Address of the primary Experience Portal Manager, system and press `Enter`.

15. On the `EPM Product ID` screen, type the Product ID of the Avaya Aura® Experience Portal system.

    You can find the product ID of Avaya Aura® Experience Portal on the System Monitor page.

a. From the Experience Portal Manager main menu in the left navigation pane, click **Real-Time Monitoring** > **System Monitor**.
b. In the **Server Name** column, click the **EPM** link.
c. In the **General Information** area, the **Product ID** field displays the product ID of Avaya Aura® Experience Portal.

16. Press `Enter` to continue.

    The system displays the `Pre-Installation Summary` screen, which displays the summary similar to the following:

```
================================================================================
Pre-Installation Summary
------------------------

Please Review the Following Before Continuing:

Product Name:
    ICR

Install Folder:
    /opt/Avaya/ICR

Product Features:
    ICRAdmin,
    ICRCCA,
    ICRCore

Disk Space Information (for Installation Target):
    Required:  731,811,129 bytes
    Available: 2,039,353,344 bytes

PRESS ENTER TO CONTINUE:
================================================================================
```

17. Press `Enter` to continue.

    The installer starts installing the ICR components. While installing ICR Admin, the installer displays the `Starting EPM service` screen to confirm starting of the Experience Portal Manager service.

```
================================================================================
Starting EPM service
--------------------

Installer will now proceed to start EPM and dependent services. This
operation will take some time.

ICRAdmin logs will be created at

/opt/Avaya/ICR/ICRAdmin/logs/ICRAdmin_InstallLog.log and
/opt/Avaya/ICR/ICRAdmin/logs/icr_install_script.log.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
================================================================================
```

Note:

By default, ICR creates the Admin logs in the `ICRAdmin_InstallLog.log` and `icr_install_script.log` files located in the *$AVAYA_ICRADMIN_HOME*/`logs` directory. Check the log files for any post installation errors.

The *$AVAYA_ICRADMIN_HOME* variable is available in the new Linux session and not in the same installation session.

18. Press `Enter` to continue.

    The installer completes the installation process of ICR Admin, and displays a message for successful installation.

19. Press `Enter` to continue.

    The installer displays the `Starting ICRCCA service` screen to confirm starting of the ICR CCA service.

```
================================================================================
Starting ICRCCA service...
--------------------------

Installer will now proceed to start ICRCCA and dependent services. This
operation will take some time.

ICRCCA logs will be created at

/opt/Avaya/ICR/ICRCCA/logs/ICRCCA_InstallLog.log and
/opt/Avaya/ICR/ICRCCA/logs/cca_install_script.log.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
================================================================================
```

Note:

By default, ICR create the CCA logs in the `ICRCCA_InstallLog.log` and `cca_install_script.log` files located in the *$AVAYA_ICRCCA_HOME*/`logs` directory. After installation, check the log files for any errors.

The *$AVAYA_ICRCCA_HOME* variable is available in a new Linux session and not in the same installation session.

20. Press `Enter` to continue.

    The installer installs ICR CCA and displays a message for successful installation.

21. Press `Enter` to continue.

    The installer displays the `Starting ICRCore service` screen to confirm starting of the ICR Core service.

```
================================================================================
Starting ICRCore service...
---------------------------

Installer will now proceed to start ICRCore and dependent services. This
operation will take some time.
```

```
ICRCore logs will be created at

/opt/Avaya/ICR/ICRCore/tomcat/logs folder.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
========================================================================
```

Note:

By default, ICR creates the Core logs in the `ICRCore_InstallLog.log` file located in the *$AVAYA_ICRCORE_HOME* directory. After installation, check the log files for any errors.

The *$AVAYA_ICRCORE_HOME* variable is available in the new Linux session and not in the same installation session.

22. Press `Enter` to continue.

    The installer installs ICR Core and displays a message of successful installation.

23. Press `Enter` to exit the installer.

Next steps

1. Reboot the system.

   Important:

   You must reboot the system and log in to a new Linux session because the updated environment variables are available only in the new session.

2. Verify that the Experience Portal Manager service is running:

   service `vpms status`

3. Verify that the ICR CCA service is running:

   service `icrcca status`

4. Verify that the ICR Core services are running:

   service `icrcore status`

   service `terracottaSrv status`

   service `icrwebservice status`

   service `httpd status`

   Note:

   If the `icrcore` service is not running, verify that the different ports are configured for Media Processing Platform (MPP) and ICR Core. To change the port for ICR Core, configure the *ICRSipTCPPort* or *ICRSipTLSPort* properties in the

`icrcore.properties` file. For more information on `icrcore.properties` file, see ICR Core property file description on page 111.

After you make the changes in the `icrcore.properties` file, run the command **`service`** `icrcore start` to start the ICR Core service.

Installing ICR Core on multiple systems

Procedure

1. Install ICR Core on the required systems.
   For more information, see Installing Core on page 30.
2. Configure Terracotta server in high availability mode on each system where you installed ICR Core.

Related topics:

Configuring Terracotta server in the cluster mode on page 40

Configuring Terracotta server in the cluster mode

Before you begin

1. On each ICR Core system, add the IP address and the host names of the all ICR Core system in the `/etc/hosts` file.
2. Synchronize the time between all the ICR Core systems.
3. Before you configure Terracotta server for high availability, stop all the ICR Core and Terracotta server instances.

About this task

ICR uses cache to store the skill related information, such as BSR data of all polling VDN's configured for a skill. When ICR PDC requests for best destination from ICR Core for a particular skill, ICR Core checks the cache for best destination information for the specified skill. If the information is available in cache and has not expired (based on the cache freshness configuration), ICR Core returns the best destination from cache. If the information in cache has expired or is not available, ICR Core initiates BSR poll to ACD, computes the best destination, updates the cache, and responds with the best destination to ICR PDC.

To minimize the polling request to ACDs, the cache is shared across all ICR Core in the system using third party software Terracotta. The Terracotta software is automatically installed on the system where you install ICR Core. Therefore, each ICR Core system has a local Terracotta server. You must configure Terracotta in a cluster mode to make the cache shared across all ICR Core.

In a Terracotta cluster mode only one server is in ACTIVE state and all other Terracotta servers are in PASSIVE state. With the cluster mode configuration, Terracotta servers become highly available with no single point of failure.

Perform the following steps to configure the Terracotta server in cluster mode.

Procedure

1. Log in to the ICR Core system on which you want to configure Terracotta in the cluster mode.
2. Log on to the Linux system either locally as a root user or remotely as a non-root user and change the user to root by using the **su -** command.
3. If you are an Avaya Services representative and if you are using Avaya Enterprise Linux or if the Avaya Service accounts are installed on this Core system:
   - Log on to the local Linux system as a sroot user.
   - Or log on remotely as a non-root user and change the user to sroot by entering the **su** - sroot command.
4. Enter the following command to stop ICR Core instances on each system.

   /sbin/service icrcore stop
5. Enter the following command to stop the Terracotta server instances on each system.

   /sbin/service terracottaSrv stop
6. On the ICR Core system, which you want to make an active Terracotta server, go to the *$AVAYA_ICRCORE_HOME* directory:
   a. From the directory, back up the icr-tc-config.xml configuration file using the following command:

      cp icr-tc-config.xml icr-tc-config.xml.old
   b. Open the icr-tc-config.xml configuration file to edit.
   c. In the configuration file, search for the <server> tag.
   d. In the <server> tag:
      - Change the value of the *host* attribute with the IP address of the ICR Core system .
      - Keep the default value of the *name* attribute as it is.

      For example:

```
=====================================================================
<server host="192.168.0.1" name="Server1">
    <dso>
        <persistence>
            <mode>Permanent-store</mode>
        </persistence>
    </dso>
</server>
=====================================================================
```

e. In the same configuration file, add another <server> tag for the ICR Core system on which you want to host another instance of Terracotta server.

   You can copy and paste the existing <server> tag.

f. In the new <server> tag:

   - Change the value of the *host* attribute to the IP address of another ICR Core system.
   - Change the value of the *name* attribute to `Server2` .

   For example:

```
==================================================================
<server host="192.168.0.2" name="Server2">
    <dso>
        <persistence>
            <mode>Permanent-store</mode>
        </persistence>
    </dso>
</server>
==================================================================
```

g. In the same configuration file, search for the <ha> tag and remove the commenting mark given to the tag.

   For example:

```
==================================================================
<ha>
    <mode>networked-active-passive</mode>
        <networked-active-passive>
            <election-time>5</election-time>
        <networked-active-passive>
</ha>
==================================================================
```

h. Save the changes and close the file.

i. Go to the *$AVAYA_ICRCORE_HOME*/bin directory.

j. Open the startup configuration script file `start-tc-server.sh` to edit.

k. Verify that the string `Server1` is present in the following code line.

```
$icrhome/terracotta-server/bin/start-tc-server.sh -n Server1 -f
$icrhome/icr-tc-config.xml > $TEMP_FILE 2>&1 &
```

l. Start the active Terracotta server (Server1) using the following command.

   /sbin/service `terracottaSrv start`

m. Verify whether the Terracotta server started in the active mode.

   Run the command:**$AVAYA_ICRCORE_HOME/terracotta-server/bin/server-stat.sh**

   The system displays the following result:

```
============================================================
localhost.health: OK
localhost.role: ACTIVE
localhost.state: ACTIVE-COORDINATOR
localhost.jmxport: 9520
============================================================
```

7. On the ICR Core system, which you want to make the passive Terracotta server, go to the *$AVAYA_ICRCORE_HOME* directory:
   a. Back up the `icr-tc-config.xml` configuration file using the following command.

      cp `icr-tc-config.xml icr-tc-config.xml.old`
   b. Copy the `icr-tc-config.xml` file available in the `$AVAYA_ICRCORE_HOME` directory on the ICR Core system with active Terracotta server (*Server1)* to the ICR Core system with passive Terracotta server (*Server2)*.
   c. If `$AVAYA_ICRCORE_HOME` on the ICR Core system with active Terracotta Server (Server1) is different from the `$AVAYA_ICRCORE_HOME` on the ICR Core system with passive Terracotta Server (Server2), edit the copied `icr-tc-config.xml` file and change the <logs> tag with the correct ICR Core installation path.
   d. After copying the file to the ICR Core system with passive Terracotta server (*Server2)*, ensure that the file ownership and group ownership for the `icr-tc-config.xml` file are *avayavp:avayavpgroup*.

      Note:

      If the file ownership and group ownership are not *avayavp:avayavpgroup*, run the **chown avayavp:avayavpgroup icr-tc-config.xml** command to change the file and group ownerships.
   e. Go to the *$AVAYA_ICRCORE_HOME*`/bin` directory.
   f. Open the startup configuration script file `start-tc-server.sh`.
   g. Change the string `Server1` to `Server2` in the following code line.

      For example:

      ```
      $icrhome/terracotta-server/bin/start-tc-server.sh -n Server2 -f
      $icrhome/icr-tc-config.xml > $TEMP_FILE 2>&1 &
      ```
   h. Save the changes and close the file.
   i. Start the passive Terracotta server named as Server2 using the following command:.

      /sbin/service `terracottaSrv start`
   j. Verify that the Terracotta server (Server2) started in the passive mode.

      Run the command:**$AVAYA_ICRCORE_HOME/terracotta-server/bin/server-stat.sh**

      The system displays the following result:

      ```
      ============================================================
      localhost.health: OK
      localhost.role: PASSIVE
      localhost.state: PASSIVE-STANDBY
      localhost.jmxport: 9520
      ============================================================
      ```
8. (Optional) If required, configure more Terracotta servers in the passive mode.

a. Stop the all the running instances of Terracotta and ICR Core servers. In this case, Server1, Server2, and Server3.
b. On the Server1, open the `icr-tc-config.xml` configuration file to edit.
c. In the file, add a new <server> tag and change the *host* and *name* attributes to point to Server3.

   For example:

```
==========================================================================
<server host="192.168.0.3" name="Server3">
    <dso>
        <persistence>
            <mode>Permanent-store</mode>
        </persistence>
    </dso>
</server>
==========================================================================
```

d. Start the active Terracotta server (Server1) using the following command.

   /sbin/service `terracottaSrv start`
e. Verify whether the Terracotta server (Server1) started in the active mode.

   Run the command: **$AVAYA_ICRCORE_HOME/terracotta-server/bin/server-stat.sh**

   The system displays the following result:

```
============================================================
localhost.health: OK
localhost.role: ACTIVE
localhost.state: ACTIVE-COORDINATOR
localhost.jmxport: 9520
============================================================
```

f. On the Server2 and Server3 system, perform the substeps mentioned in the step 7.

9. Start each passive Terracotta server using the following command:

   /sbin/service `terracottaSrv start`
10. Start all the ICR Core systems using the following command:

    /sbin/service `icrcore start`

Note:

After configuring all ICR Core system in HA mode, if you plan to remove one of the configured ICR Core system out of network for maintenance, ensure that the server entries are removed from the `icr-tc-config.xml`.

Installing ICR using the silent installer

Before you begin

If you are installing Avaya Aura® Experience Portal for the first time, see the *Avaya Aura® Experience Portal* documentation on the Avaya support site at http://support.avaya.com.

Note:

Install ICR Admin only on the system on which Experience Portal Manager is running.

Procedure

1. Mount the ICR installation media.

   For information about mounting the installation media, see Mounting the ICR media on page 145.

2. Copy `icr_silent_install.properties` file from the mount point directory to a temporary directory on the system.

3. Edit the `icr_silent_install.properties` file.

   The file contains the following:

```
================================================================================
# Replay feature output
# ---------------------
# This file was built by the Replay feature of InstallAnywhere.
# It contains variables that were set by Panels, Consoles or Custom Code.


#Choose Install Folder
#---------------------
USER_INSTALL_DIR=/opt/Avaya/ICR

#All selected ICR components will be installed under this directory
#Choose Product Features
#-----------------------
CHOSEN_INSTALL_FEATURE_LIST=ICRAdmin,ICRCCA,ICRCore
CHOSEN_INSTALL_SET=Typical

#Install
#-------
-fileOverwrite_/opt/Avaya/ICR/ICR_Uninstaller/Uninstall_ICR.lax=Yes

#VoicePortal Product Key
#-----------------------
VOICEPORTAL_PRODUCT_KEY_1=1234567890

#Inputs to install ICR Core and ICR CCA.
#VPMS IP Address
#---------------
VPMS_IP_ADDRESS_1=127.0.0.1

#
# Set the following variables to "true" if performing an upgrade operation
#
```

```
ICRADMIN_UPGRADE_REQUIRED=false
ICRCCA_UPGRADE_REQUIRED=false
ICRCORE_UPGRADE_REQUIRED=false
#
# Used by ICR Admin installer to decide whether to EPM or not.
# 0 - Indicates to stop EPM service before admin installation
# 1 - Indicates not to stop EPM service before admin installation
# Recommended to set this value as 0 otherwise ICRAdmin menu's will not be
visible till vpms is restarted manually.
#
PROMPT_STOP_EPM=0
=============================================================================
```

The details of the fields present in the `icr_silent_install.properties` file are:

Parameter	Description
USER_INSTALL_DIR	The ICR installation path. By default the installer displays the path as: `/opt/Avaya/ICR`. However, you can provide different install path. Do not set the path as: `/root/`.
CHOSEN_INSTALL_FEATURE_LIST	The ICR component names that the installer is installing. By default the installer displays all the ICR component names, such as `ICRAdmin,ICRCCA,ICRCore`. Keep the component names that you want to install and remove the other component names.
CHOSEN_INSTALL_SET	The installation type. The default value is `Typical`. Do not change the default value.
VOICEPORTAL_PRODUCT_KEY_1	The Product ID of the Avaya Aura® Experience Portal system.
VPMS_IP_ADDRESS_1	The IP address of the primary Experience Portal Manager system.
ICRADMIN_UPGRADE_REQUIRED	A value that the ICR installer uses only for upgrading ICR Admin. By default the value is set to false.
ICRCCA_UPGRADE_REQUIRED	A value that the ICR installer uses only for upgrading ICR CCA. By default the value is set to false.
ICRCORE_UPGRADE_REQUIRED	A value that the ICR installer uses only for upgrading ICR Core. By default the value is set to false.
PROMPT_STOP_EPM	A value that the ICR Admin installer uses to decide whether to stop

Parameter	Description
	Experience Portal Manager service or not.

Note:

- The system does not display the installation progress. Therefore, wait until the installation process completes.
- The installer installs ICR using the values from the `icr_silent_install.properties` file.

4. Save the changes and close the file.
5. Type `./install_icr.bin -i silent -f <Location_of_the_icr_silent_install.properties_file>/icr_silent_install.properties`, and press `Enter`.

   Where,

   - *I* is the mode of installation.
   - *f* is the file location of the `icr_silent_install.properties` file.

Note:

If you install ICR using the silent installer, the uninstaller uninstalls all the ICR components silently.

Next steps

1. Verify that the `httpd` service is configured for an auto start.

   Enter the following command to check the auto start status of the httpd service:

   ```
   chkconfig httpd – –list
   ```

   Command output:

   ```
   httpd      0:off   1:off   2:on    3:on    4:on    5:on    6:off
   ```

   In the command output, check that the levels 2 to 5 displays the status as *on*.

   If the status for the level 2 to 5 is *off*, configure the httpd service for auto start using the following command:

   ```
   chkconfig httpd on
   ```

2. Reboot the system where you installed the ICR components and verify that the following services are running:

   - Experience Portal Manager service:

     ```
     service vpms status
     ```

- ICR CCA service:

```
service icrcca status
```

- ICR Core services:

```
service icrcore status
service terracottaSrv status
service icrwebservice status
service httpd status
```

Chapter 4: Upgrading Intelligent Customer Routing

Prerequisites for upgrading ICR

Intelligent Customer Routing (ICR) is a managed application of Avaya Aura® Experience Portal. Therefore, Avaya Aura® Experience Portal and ICR have common hardware and software specifications. However, ICR has some additional prerequisites.

Software prerequisites

- Avaya Aura® Experience Portal 6.0 Service Pack 3

Hardware prerequisites

- RAM: 4-GB or more

Note:

For more information about the minimum hardware requirements, see *Planning for Avaya Aura® Experience Portal*.

Operating system prerequisites

- Disable the firewall or antivirus software running on the system.
- Set `selinux` to the permissive mode. For more information, see the Linux operating system documentation.
- Synchronize the time between all the Avaya Aura® Experience Portal and ICR systems.
- Use a new `ssh` session for upgrading ICR and not the same session used for installing ICR.

About upgrading ICR

Using the ICR installer, you can upgrade the earlier ICR Releases 6.x and 6.0.x to the Release 6.0.3.

With the installer, you can upgrade the following ICR components:

- ICR Admin
- ICR Call Control Application (CCA)
- ICR Core

While upgrading, the installer retains the existing license counts and configuration of the ICR components.

Note:

The installer stops all the running services for all the ICR components.

You can use the installer to upgrade the ICR components on a single system or multiple systems. The installer supports the console and the silent mode for upgrade.

Upgrade the ICR components in the following order:

1. Upgrade the ICR Admin component on the Experience Portal Manager system.

   Note:

   Before upgrading, the ICR installer stops the running vpms service.
2. Upgrade the ICR PDC component installed on the Application server system.
3. Upgrade the ICR CCA component installed on a single or multiple systems. You must upgrade all ICR CCA systems one after another and not simultaneously.
4. Upgrade the ICR Core component installed on a single or multiple systems.

   Also, upgrade the ICR Core component on all the passive Terracotta servers first and after that upgrade on the active Terracotta server.

Following are the different ways of upgrading ICR:

Single system upgrade

You can upgrade the ICR components on a single system.

Multisystem upgrade

You can upgrade the ICR components separately on multiple systems.

The following system requirements are for multisystem upgrades:

- ICR Admin

  You must upgrade this component on a primary Experience Portal Manager system.
- ICR CCA and ICR Core

  You can upgrade these components on an auxiliary Experience Portal Manager system or on a standalone Linux system.

Note:

To upgrade ICR Core or ICR CCA on a standalone Redhat Enterprise Linux system, follow the prerequisites mentioned in *Implementing Avaya Aura® Experience Portal on multiple servers* available at the Avaya support site: http://support.avaya.com.

Important:

To upgrade the ICR CCA and ICR Core on a standalone Linux system, the system does not support remote access using Secured Access Link (SAL).

Silent upgrade

You can upgrade the ICR components in a silent mode. Silent upgrade is useful when you know the required upgrade settings and you do not want to change the settings.

Note:

After you upgrade the ICR components, you must configure the upgraded ICR components. For more information about configuring the ICR components, see *Administering Intelligent Customer Routing*.

Upgrading ICR Admin

Before you begin

Before upgrading ICR Admin, check the prerequisites in Prerequisites for upgrading ICR on page 49.

Procedure

1. Mount the ICR installation media on the system where ICR Admin is installed.
   For information about mounting the installation media, see Mounting the ICR media on page 145.
2. Type `./install_icr.bin` and press `Enter` to run the installer.
3. On the `Introduction` screen, press `Enter`.
4. On the `License` screen, press `Enter`.
   The system displays a message: `Do you accept the terms of this license agreement?`

   Note:

   Press `Enter` several times to view the complete license page.
5. Type `Y` and press `Enter` to accept the license agreement.

6. On the `Choose Install Path` screen, enter the path where you installed ICR Admin and press `Enter`.

   By default, the installer displays the path as: `/opt/Avaya/ICR`.

   Note:

   Before upgrading ICR Admin, the installer checks if the specified path matches the path set in the *$AVAYA_ICRADMIN_HOME* environment variable. If the path does not match, the installer displays the path mismatch error screen and prompts the user to exit the installer and run the installer again with the correct path.

```
================================================================================
Install Path Mismatch
---------------------

Installer has found a mismatch in chosen path versus installed path. ICR
component(s) cannot be upgraded to a new location.

If you have previously installed ICR components on separate location please
upgrade each component individually at installed location:


Component:    Installed At:                          New Location:
ICRADMIN    /opt/Avaya/ICRADMIN/ICRADMIN    /opt/Avaya/ICR/ICRADMIN


PRESS <ENTER> TO EXIT THE INSTALLER:
================================================================================
```

7. On the `Choose Product Features` screen, the system displays a message: `Please choose the Features to be installed by this installer`.

   Tip:

   - By default, the system does not select any component. You can select or clear the components by entering a choice.
   - To go back to the previous page, type `back` and press `Enter`.
   - To select or clear a feature, enter the feature number separated by a comma.
   - To cancel the installation at any time, type `quit` and press `Enter`.

8. Type `1` and press `Enter` to select ICR Admin.
   The system displays *[X]* besides the selected feature name.
9. Press `Enter` to continue.
   The system displays the `Version Confirmation` screen with the information about the component that you are upgrading. The information includes the name of the component, the component version if the component is already installed, the new version of the component, and the installation type.

Note:

When you install the ICR component, the **Install Type** column displays the installation type as **Full Install**. But, when you upgrade the ICR component, the **Install Type** column displays the installation type as **Upgrade**.

```
================================================================================
Version Confirmation
--------------------

For the components to be installed, confirm the version numbers and the
install type. For upgrades, most data and configuration will be preserved.
For full installs, however, existing data and configuration will be
overwritten.

Please proceed to accept, or type "back" to return to the previous dialog
to modify which components to install.

Component:    Installed Version:    New Version:    Install Type:
ICRAdmin        6.0.x.0.x        6.0.3.0.x        Upgrade

Continue with installation? (Y/N):
================================================================================
```

10. Type `Y` and press `Enter` to continue.
    The installer checks the prerequisites required for ICR Admin and displays the summary similar to the following.

```
================================================================================
ICR Admin Prerequisite Check status
-----------------------------------

Prerequisite                          Expected result        Found
Is EPM installed?                      YES                     YES
Is EPM Version supported?        6.x                    6.0.3.0.x

PRESS <ENTER> TO CONTINUE:
================================================================================
```

11. Press `Enter` to continue.
    To upgrade ICR Admin, the installer must stop the Experience Portal Manager service. Therefore, the ICR Admin installer displays the `Stopping EPM service` screen to confirm stopping of the Experience Portal Manager service.

    The default option is Continue.

```
================================================================================
Stopping EPM service
--------------------

Installer will now proceed to stop Experience Portal Management service.

Do you want to continue?

  ->1- Continue
    2- Exit

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
================================================================================
```

12. Press `Enter` to continue, or type `2` and press `Enter` to exit the installer.
    The system displays the `Pre-Installation Summary` screen with the summary similar to the following:

```
================================================================================

Pre-Installation Summary
------------------------

Please Review the Following Before Continuing:

Product Name:
    ICR

Install Folder:
    /opt/Avaya/ICR

Product Features:
    ICRAdmin

Disk Space Information (for Installation Target):
    Required:  40,492,141 bytes
    Available: 1,035,722,752 bytes

PRESS <ENTER> TO CONTINUE:
================================================================================
```

13. Press `Enter` to continue.
    The installer starts upgrading ICR Admin.

    While upgrading ICR Admin, the ICR Admin installer displays the `Starting EPM service` screen to confirm the start of the Experience Portal Manager service.

```
================================================================================
Starting EPM service
--------------------

Installer will now proceed to start EPM and dependent services. This
operation will take some time.

ICRAdmin logs will be created at

/opt/Avaya/ICR/ICRAdmin/logs/ICRAdmin_InstallLog.log and
/opt/Avaya/ICR/ICRAdmin/logs/icr_install_script.log.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
================================================================================
```

Note:

By default, the installer creates the install logs of ICR Admin in the `ICRAdmin_InstallLog.log` and `admin_install_script.log` files located in the *`$AVAYA_ICRADMIN_HOME`*`/logs` directory. After upgrading ICR Admin, check the log files for any errors.

14. Press `Enter` to continue.

The installer completes upgrading ICR Admin and displays a message to confirm the successful upgrade.

15. Press `Enter` to exit the installer.

Next steps

Verify that the Experience Portal Manager service is running:

```
service vpms status
```

Upgrading ICR CCA

Before you begin

Check the prerequisites in Prerequisites for upgrading ICR on page 49.

Procedure

1. Mount the ICR installation media on the system where ICR CCA is installed.
   For information about mounting the installation media, see Mounting the ICR media on page 145.
2. Type `./install_icr.bin`, and press `Enter` to run the installer.
3. On the `Introduction` screen, press `Enter`.
4. On the `License` screen, press `Enter`.
   The system displays the message: `Do you accept the terms of this license agreement?`

   Note:

   Press `Enter` several times to view the complete license page.
5. Type `Y`, and press `Enter` to accept the license agreement.
6. On the `Choose Install Path` screen, enter the path where you installed ICR CCA and press `Enter`.
   By default, the installer displays the path as: `/opt/Avaya/ICR`.

   Note:

   Before upgrading ICR CCA, the installer checks if the specified path matches the path set in the *$AVAYA_ICRCCA_HOME* environment variable. If the path does not match, the installer displays the `Install Path Mismatch` screen and prompts the user to exit the installer and run the installer again with the correct path.

```
===============================================================================
Install Path Mismatch
```

```
--------------------

Installer has found a mismatch in chosen path versus installed path. ICR
component(s) cannot be upgraded to a new location.

If you have previously installed ICR components on separate location please
upgrade each component individually at installed location:

Component:        Installed At:                       New Location:
ICRCCA            /opt/Avaya/ICRCCA/ICRCCA       /opt/Avaya/ICR/ICRCCA

PRESS <ENTER> TO EXIT THE INSTALLER:
===============================================================================
```

7. On the `Choose Product Features` screen, the system displays the message: `Please choose the Features to be installed by this installer`.

   Tip:

   - By default, the system does not select any component. You can select or clear the components by entering a choice.
   - To go back to the previous page, type `back` and press `Enter`.
   - To select or clear a feature, enter the feature number separated by comma.
   - To cancel the installation at any time, type `quit` and press `Enter`.

8. Type `2`, and press `Enter` to select ICR CCA .

   The system displays *[X]* besides the selected feature name.

9. Press `Enter` to continue.

   The system displays the `Version Confirmation` screen with the information about the component that you are upgrading. The information includes the name of the component, the component version if the component is already installed, the new version of the component, and the installation type.

   Note:

   When you install the ICR component, the **Install Type** column displays the installation type as **Full Install**. But, when you upgrade the ICR component, the **Install Type** column displays the installation type as **Upgrade**.

```
===============================================================================
Version Confirmation
--------------------

For the components to be installed, confirm the version numbers and the
install type. For upgrades, most data and configuration will be preserved.
For full installs, however, existing data and configuration will be
overwritten.

Please proceed to accept, or type "back" to return to the previous dialog
to modify which components to install.

Component:       Installed Version:       New Version:       Install Type:
```

```
ICRCCA            6.0.x.0.x                    6.0.3.0.x            Upgrade

Continue with installation? (Y/N):
================================================================================
```

10. Type `Y`, and press `Enter` to continue.
    The installer checks the prerequisites required for ICR CCA and displays the summary similar to the following:

```
================================================================================
ICR CCA/ICR Core Prerequisite Check status
------------------------------------------

Prerequisite        Expected result            Found
OS & Version:       AVAYA Linux/RHEL6.x       Red Hat Enterprise Linux  6.0
Memory:                4 GB                          4.021 GB


PRESS <ENTER> TO CONTINUE:
================================================================================
```

11. Press `Enter` to continue.
    The system displays the `Pre-Installation Summary` screen with the summary similar to the following:

```
================================================================================
Pre-Installation Summary
------------------------

Please Review the Following Before Continuing:

Product Name:
    ICR

Install Folder:
    /opt/Avaya/ICR

Product Features:
    ICRCCA

Disk Space Information (for Installation Target):
    Required:  275,603,020 bytes
    Available: 1,929,621,504 bytes

PRESS ENTER TO CONTINUE:
================================================================================
```

12. Press `Enter` to continue.
    The installer starts upgrading ICR CCA.

    While upgrading ICR CCA, the ICR CCA installer displays the `Starting ICRCCA service` screen to confirm the start of the ICR CCA service.

```
================================================================================
Starting ICRCCA service...
--------------------------

Installer will now proceed to start ICRCCA and dependent services. This
operation will take some time.

ICRCCA logs will be created at

/opt/Avaya/ICR/ICRCCA/logs/ICRCCA_InstallLog.log and
```

```
/opt/Avaya/ICR/ICRCCA/logs/cca_install_script.log.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
================================================================================
```

Note:

By default, the installer creates the install logs of ICR CCA in the `ICRCCA_InstallLog.log` and `cca_install_script.log` files located in the *`$AVAYA_ICRCCA_HOME`*`/logs` directory. After upgrading ICR CCA, check the log files for any errors.

13. Press `Enter` to continue.
    The installer upgrades ICR CCA and displays a message to confirm the successful upgrade.
14. Press `Enter` to exit the installer.

Next steps

1. Verify that the ICR CCA service is running:

   `service` `icrcca status`

2. Fetch the updated security certificate from the primary Experience Portal Manager system on the ICR CCA system.

   You must fetch the updated security certificate if you change the system certificate during the primary Avaya Aura® Experience Portal 6.0 upgrade. For more information about managing the security certificate on the ICR CCA system, see *Administrating Intelligent Customer Routing*.

Upgrading ICR Core

Before you begin

Check the prerequisites mentioned in Prerequisites for upgrading ICR on page 49.

About this task

If the configuration of ICR has multiple Core servers with Terracotta server in high availability mode, upgrade ICR Core in one of the following ways:

- Upgrade ICR Core on all the passive Terracotta servers first and after that upgrade on the active Terracotta server.

  Check the instances of active and passive Terracotta servers.

  a. Log in to the ICR Core system on which you want to check the active and passive roles of the running Terracotta server.

b. Go to the *$AVAYA_ICRCORE_HOME*/terracotta-server/bin/ directory.

c. Run the command: **./server-stat.sh**.

The system displays the result similar to the following:

```
============================================================
localhost.health: OK
localhost.role: ACTIVE
localhost.state: ACTIVE-COORDINATOR
localhost.jmxport: 9520
============================================================
```

The *localhost.role* value shows the role of the Terracotta server.

- Stop the following ICR Core services that are running and after that upgrade ICR Core on a system one after another.

service icrcore stop

service terracottaSrv stop

service icrwebservice stop

Procedure

1. Mount the ICR installation media on the system where ICR Core is installed.
   For information about mounting the installation media, see Mounting the ICR media on page 145.
2. Type `./install_icr.bin`, and press `Enter` to run the installer.
3. On the `Introduction` screen, press `Enter`.
4. On the `License` screen, press `Enter`.
   The system displays the message: `Do you accept the terms of this license agreement?`

   Note:

   Press `Enter` several times to view the complete license page.
5. Type `Y`, and press `Enter` to accept the license agreement.
6. On the `Choose Install Path` screen, enter the path where you installed ICR Core and press `Enter`.
   By default, the installer displays the path as: `/opt/Avaya/ICR`.

   Note:

   Before upgrading ICR Core, the installer checks if the specified path matches the path set in the *$AVAYA_ICRCORE_HOME* environment variable. If the path does not match, the installer displays the `Install Path Mismatch` screen

and prompts the user to exit the installer and run the installer again with the correct path.

```
========================================================================
Install Path Mismatch
---------------------

Installer has found a mismatch in chosen path versus installed path. ICR
component(s) cannot be upgraded to a new location.

If you have previously installed ICR components on separate location
please upgrade each component individually at installed location:

Component:        Installed At:                          New Location:
ICRCORE           /opt/Avaya/ICRCORE/ICRCORE       /opt/Avaya/ICR/ICRCORE

PRESS <ENTER> TO EXIT THE INSTALLER:
========================================================================
```

7. On the `Choose Product Features` screen, the system displays the message: `Please choose the Features to be installed by this installer`.

   Tip:

   - By default, the system does not select any component. You can select or clear the components by entering a choice.
   - To go back to the previous page, type `back` and press `Enter`.
   - To select or clear a feature, enter the feature number separated by a comma.
   - To cancel the installation at any time, type `quit` and press `Enter`.

8. Type `3`, and press `Enter` to select ICR Core .

   The system displays *[X]* besides the selected feature name.

9. Press `Enter` to continue.

   The system displays the `Version Confirmation` screen with the information about the component that you are upgrading. The information includes the name of the component, the component version if the component is already installed, the new version of the component, and the installation type.

   Note:

   When you install the ICR component, the **Install Type** column displays the installation type as **Full Install**. But, when you upgrade the ICR component, the **Install Type** column displays the installation type as **Upgrade**.

```
========================================================================
Version Confirmation
--------------------

For the components to be installed, confirm the version numbers and the
install type.For upgrades, most data and configuration will be preserved.
For full installs, however, existing data and configuration will be
overwritten.
```

```
Please proceed to accept, or type "back" to return to the previous dialog
to modify which components to install.

Component:       Installed Version:       New Version:       Install Type:
ICRCore           6.0.x.0.x                  6.0.3.0.x           Upgrade

Continue with installation? (Y/N):
================================================================================
```

10. Type `Y`, and press `Enter` to continue.
    The installer checks the prerequisites required for ICR Core and displays the summary similar to the following:

```
================================================================================
ICR CCA/ICR Core Prerequisite Check status
------------------------------------------

Prerequisite        Expected result            Found
OS & Version:       AVAYA Linux/RHEL6.x       Red Hat Enterprise Linux  6.0
Memory:                4 GB                          4.021 GB


PRESS <ENTER> TO CONTINUE:
================================================================================
```

11. Press `Enter` to continue.
    The system displays the `Pre-Installation Summary` screen with the summary similar to the following:

```
================================================================================
Pre-Installation Summary
------------------------

Please Review the Following Before Continuing:

Product Name:
    ICR

Install Folder:
    /opt/Avaya/ICR

Product Features:
    ICRCore

Disk Space Information (for Installation Target):
    Required:  427,953,696 bytes
    Available: 2,074,517,504 bytes

PRESS ENTER TO CONTINUE:
================================================================================
```

12. Press `Enter` to continue.
    The installer starts upgrading ICR Core. While upgrading ICR Core, the ICR Core installer displays the `Starting ICRCore service` screen to confirm the start of the ICR Core service.

```
================================================================================
Starting ICRCore service...
---------------------------

Installer will now proceed to start ICRCore and dependent services. This
operation will take some time.
```

```
ICRCore logs will be created at

/opt/Avaya/ICR/ICRCore/tomcat/logs folder.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
========================================================================
```

Note:

By default, the installer creates the install logs of ICR Core in the `ICRCore_InstallLog.log` file located in the *`$AVAYA_ICRCORE_HOME`* directory. After upgrading ICR Core, check the log files for any errors.

13. Press `Enter` to continue.
    The installer upgrades ICR Core and displays a message to confirm the successful upgrade.
14. Press `Enter` to exit the installer.

Next steps

1. Verify that the `httpd` service is configured for an auto start.

   Enter the following command to check the auto start status of the httpd service:

   `chkconfig` `httpd – –list`

   Command output:

   ```
   httpd      0:off   1:off   2:on    3:on    4:on    5:on    6:off
   ```

   In the command output, check that the levels 2 to 5 display the status as *on*.

   If the status for the levels 2 to 5 is *off*, configure the `httpd` service for auto start using the following command:

   `chkconfig` `httpd on`

2. Fetch the updated security certificate from the primary Experience Portal Manager system on the ICR Core system.

   You must fetch the updated security certificate if you change the system certificate during the primary Avaya Aura® Experience Portal 6.0 upgrade. For more information on managing the security certificate on the ICR Core system, see *Administrating Intelligent Customer Routing*.

3. If you change the system certificate while upgrading the auxiliary Avaya Aura® Experience Portal 6.0 on which ICR Core is installed:

   - Update the security certificate for the ICR Core.
   - Import the security certificate on the primary Experience Portal Manager system.

- Import the updated security certificate from the auxiliary Experience Portal Manager system to the Application server.

For more information on managing the security certificate for ICR Core and primary Experience Portal Manager system, see *Administrating Intelligent Customer Routing*. For more information on importing the security certificate on the Application server, see Importing ICR Core certificate on the application server on page 109.

4. Reboot the system and verify that the ICR Core services are running.

```
service icrcore status
service terracottaSrv status
service icrwebservice status
service httpd status
```

5. Start the ICR Core BSR polling service from the ICR Manager Web page.
    a. From the Experience Portal Manager main menu in the left navigation pane, click **System Management** > **ICR Manager**.
    b. On the ICR Manager Web page, select the ICR Core server.
    c. In the **Service Commands** area, click **Start**.

Upgrading ICR on a single system

About this task

To upgrade ICR on a single system, upgrade the following ICR components installed on a single system:

1. ICR Admin
2. ICR CCA
3. ICR Core

The installer upgrades all the ICR components in the given order.

Procedure

1. Mount the ICR installation media on the system where you installed all the three ICR components.

   For information about mounting the installation media, see Mounting the ICR media on page 145.
2. Type `./install_icr.bin`, and press `Enter` to run the installer.
3. On the `Introduction` screen, press `Enter`.
4. On the `License` screen, press `Enter`.

The system displays the message: `Do you accept the terms of this license agreement?`

Note:

Press `Enter` several times to view the complete license page.

5. Type `Y`, and press `Enter` to accept the license agreement.
6. On the `Choose Install Directory` screen, enter the path where you installed all the ICR components.

   By default, the installer displays the path as: `/opt/Avaya/ICR`.

   Note:

   - Before upgrading the ICR components, the installer checks if the specified path matches the path set in the *$AVAYA_ICRADMIN_HOME*, *$AVAYA_ICRCCA_HOME*, *$AVAYA_ICRCORE_HOME* environment variables. If the path does not match, the installer displays the `Install Path Mismatch` screen and prompts you to exit the installer and run the installer again with the correct path.
   - If you installed the ICR components at different locations, you must separately upgrade the individual ICR components. For more information about upgrading individual ICR components, see Upgrading ICR Admin on page 51, Upgrading ICR CCA on page 55, Upgrading ICR Core on page 58.

```
===============================================================================
Install Path Mismatch
---------------------

Installer has found a mismatch in chosen path versus installed path. ICR
component(s) cannot be upgraded to a new location.

If you have previously installed ICR components on separate location
please upgrade each component individually at installed location:

Component:        Installed At:                       New Location:
ICRCCA            /opt/Avaya/ICRCCA/ICRCCA       /opt/Avaya/ICR/ICRCCA


PRESS <ENTER> TO EXIT THE INSTALLER:
===============================================================================
```

7. Press `Enter` to continue.

   The system displays the `Choose Product Features` screen with the message: `Please choose the Features to be installed by this installer`

   Tip:

   - By default, the system does not select any component. You can select or clear the components by entering a choice.

- To go back to the previous page, type `back` and press `Enter`.
- To select or clear a feature, enter the feature number separated by a comma.
- To cancel the installation, type `quit` and press `Enter`.

8. Type `1,2,3`, and press `Enter` to select ICR Admin, ICR CCA, and ICR Core components.
   The system displays *[X]* besides the selected feature name.
9. Press `Enter` to continue.
   The system displays the `Version Confirmation` screen with the information about the component that you are upgrading. The information includes the name of the component, the component version if the component is already installed, the new version of the component, and the installation type.

Note:

When you install the ICR component, the **Install Type** column displays the installation type as **Full Install**. But, when you upgrade the ICR component, the **Install Type** column displays the installation type as **Upgrade**.

```
================================================================================
Version Confirmation
--------------------

For the components to be installed, confirm the version numbers and the
install type. For upgrades, most data and configuration will be preserved.
For full installs, however, existing data and configuration will be
overwritten.

Please proceed to accept, or type "back" to return to the previous dialog
to modify which components to install.

Component:       Installed Version:       New Version:       Install Type:
ICRAdmin           6.0.x.0.x                 6.0.3.0.x           Upgrade
ICRCCA            6.0.x.0.x                 6.0.3.0.x           Upgrade
ICRCore            6.0.x.0.x                 6.0.3.0.x           Upgrade

Continue with installation? (Y/N):
================================================================================
```

10. Type `Y`, and press `Enter` to continue.
    The installer checks the prerequisites required for ICR Admin and displays the summary similar to the following:

```
================================================================================
ICR Admin Prerequisite Check status
-----------------------------------

Prerequisite                          Expected result        Found
Is EPM installed?                      YES                       YES
Is EPM Version supported?           6.x                        6.0.3.0.x


PRESS <ENTER> TO CONTINUE:
================================================================================
```

11. Press `Enter` to continue.
    To upgrade ICR Admin, the installer must stop the Experience Portal Manager service. Therefore, the installer displays the `Stopping EPM service` screen with the message to confirm stopping of the Experience Portal Manager service.

    The default option is Continue.

```
================================================================================
Stopping EPM service
--------------------

Installer will now proceed to stop Experience Portal Management service.

Do you want to continue?

  ->1- Continue
    2- Exit

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
================================================================================
```

12. Press `Enter` to continue, or type `2` and press `Enter` to exit the installer.

    Before upgrading ICR Core and ICR CCA, the installer checks the prerequisites and displays the summary similar to the following:

```
================================================================================
ICR CCA/ICR Core Prerequisite Check status
------------------------------------------

Prerequisite         Expected result            Found
OS & Version:       AVAYA Linux/RHEL6.x       Red Hat Enterprise Linux  6.0
Memory:                4 GB                          4.152 GB

PRESS <ENTER> TO CONTINUE:
================================================================================
```

13. Press `Enter` to continue.

    The system displays the `Pre-Installation Summary` screen, which displays the summary similar to the following:

```
================================================================================
Pre-Installation Summary
------------------------

Please Review the Following Before Continuing:

Product Name:
    ICR

Install Folder:
    /opt/Avaya/ICR

Product Features:
    ICRAdmin,
    ICRCCA,
    ICRCore

Disk Space Information (for Installation Target):
    Required:  731,811,129 bytes
    Available: 2,039,353,344 bytes
```

```
PRESS ENTER TO CONTINUE:
================================================================================
```

14. Press `Enter` to continue.
    The installer starts upgrading the ICR components. While upgrading ICR Admin, the installer displays the `Starting EPM service` screen to confirm the start of the Experience Portal Manager service.

```
================================================================================
Starting EPM service
--------------------

Installer will now proceed to start EPM and dependent services. This
operation will take some time.

ICRAdmin logs will be created at

/opt/Avaya/ICR/ICRAdmin/logs/ICRAdmin_InstallLog.log and
/opt/Avaya/ICR/ICRAdmin/logs/icr_install_script.log.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
================================================================================
```

Note:

By default, the installer creates the install logs of ICR Admin in the `ICRAdmin_InstallLog.log` and `admin_install_script.log` files located in the *`$AVAYA_ICRADMIN_HOME`*`/logs` directory. After upgrade, check the log files for any errors.

15. Press `Enter` to continue.
    The installer upgrades ICR Admin and displays a message to confirm the successful upgrade of ICR Admin.
16. Press `Enter` to continue.
    The installer displays the `Starting ICRCCA service` screen to confirm the start of the ICR CCA service.

```
================================================================================
Starting ICRCCA service...
--------------------------

Installer will now proceed to start ICRCCA and dependent services. This
operation will take some time.

ICRCCA logs will be created at

/opt/Avaya/ICR/ICRCCA/logs/ICRCCA_InstallLog.log and
/opt/Avaya/ICR/ICRCCA/logs/cca_install_script.log.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
================================================================================
```

Note:

By default, the installer creates the install logs of ICR CCA in the `ICRCCA_InstallLog.log` and `cca_install_script.log` files located in the *$AVAYA_ICRCCA_HOME*`/logs` directory. After upgrade, check the log files for any errors.

17. Press `Enter` to continue.

    The installer upgrades ICR CCA and displays a message to confirm the successful upgrade of ICR CCA.

18. Press `Enter` to continue.
    The installer displays the `Starting ICRCore service` screen to confirm the start of the ICR Core service.

```
================================================================================
Starting ICRCore service...
---------------------------

Installer will now proceed to start ICRCore and dependent services. This
operation will take some time.

ICRCore logs will be created at

/opt/Avaya/ICR/ICRCore/tomcat/logs folder.

Please check the same for any errors after installation.

PRESS <ENTER> TO CONTINUE:
================================================================================
```

Note:

By default, the installer creates the install logs of ICR Core in the `ICRCore_InstallLog.log` file located in the *$AVAYA_ICRCORE_HOME* directory. After upgrade, check the log files for any errors.

19. Press `Enter` to continue.

    The installer upgrades ICR Core and displays a message to confirm the successful upgrade of ICR Core.

20. Press `Enter` to exit the installer.

Next steps

Reboot the system where you upgraded the ICR components and verify that the following services are running:

- Experience Portal Manager service:

  `service` `vpms status`

- ICR CCA service:

```
service icrcca status
```

- ICR Core services:

```
service icrcore status
service terracottaSrv status
service icrwebservice status
service httpd status
```

Upgrading ICR using silent installer

Procedure

1. Mount the ICR installation media on a system where you want to upgrade the ICR components.
   For information about mounting the installation media, see Mounting the ICR media on page 145.
2. Copy the `icr_silent_install.properties` file from the mount point directory to a temporary directory on the system.
3. Edit the `icr_silent_install.properties` file.
   The file contains the following:

```
================================================================================
# Replay feature output
# ---------------------
# This file was built by the Replay feature of InstallAnywhere.
# It contains variables that were set by Panels, Consoles or Custom Code.


#Choose Install Folder
#---------------------
USER_INSTALL_DIR=/opt/Avaya/ICR

#All selected ICR components will be installed under this directory
#Choose Product Features
#----------------------
CHOSEN_INSTALL_FEATURE_LIST=ICRAdmin,ICRCCA,ICRCore
CHOSEN_INSTALL_SET=Typical

#Install
#-------
-fileOverwrite_/opt/Avaya/ICR/ICR_Uninstaller/Uninstall_ICR.lax=Yes

#VoicePortal Product Key
#-----------------------
VOICEPORTAL_PRODUCT_KEY_1=1234567890

#Inputs to install ICR Core and ICR CCA.
#VPMS IP Address
#---------------
VPMS_IP_ADDRESS_1=127.0.0.1
```

```
#
# Set the following variables to "true" if performing an upgrade operation
#
ICRADMIN_UPGRADE_REQUIRED=false
ICRCCA_UPGRADE_REQUIRED=false
ICRCORE_UPGRADE_REQUIRED=false
================================================================================
```

The details of the fields present in the `icr_silent_install.properties` file are:

Parameter	Description
USER_INSTALL_DIR	Specify the directory where the ICR components are installed. Use the **echo** command to find the location of the ICR components that you already installed. For example, **echo** *$AVAYA_ICRADMIN_HOME*, **echo** *$AVAYA_ICRCORE_HOME*, and **echo** *$AVAYA_ICRCCA_HOME*. From the output of the **echo** command, copy the installed location of the ICR component, excluding the ICR component directory name displayed at the end. Use the copied location as the value for the USER_INSTALL_DIR parameter. For example, Command: echo *$AVAYA_ICRADMIN_HOME* Command output: `/opt/Avaya/ICR/ICAAdmin` From the command output, exclude the ICR component directory name, that is `ICRAdmin` and use the remaining part as the upgrade location. **Note:** If you installed the ICR components in different directories, for example ICR Admin installed at `/opt/Avaya/ICR` and ICR CCA installed at `/opt/Avaya/ICR2`, you must separately upgrade those ICR components.
CHOSEN_INSTALL_FEATURE_LIST	Specify the ICR components that you want to upgrade and remove the other ICR components. The default feature list is: `ICRAdmin,ICRCCA,ICRCore`.

Parameter	Description
CHOSEN_INSTALL_SET	Specify the installation type. The default value is `Typical`. **Note:** Do not change the default value.
VOICEPORTAL_PRODUCT_KEY_1	Specify the Product ID of the Avaya Aura® Experience Portal system.
VPMS_IP_ADDRESS_1	Specify the IP address of the primary Experience Portal Manager system.
ICRADMIN_UPGRADE_REQUIRED	Set the value of this parameter to `true` if you want to upgrade ICR Admin.
ICRCCA_UPGRADE_REQUIRED	Set the value of this parameter to `true` if you want to upgrade ICR CCA.
ICRCORE_UPGRADE_REQUIRED	Set the value of this parameter to `true` if you want to upgrade ICR Core.

Note:

The installer installs ICR using the values from the `icr_silent_install.properties` file.

4. Save the changes and close the file.
5. Type `./install_icr.bin -i silent -f <Location_of_the_icr_silent_install.properties_file>/icr_silent_install.properties` and press `Enter`:

   where,

   - *i* is the mode of upgrade.
   - *f* is the file location of the `icr_silent_install.properties` file.

   The installer upgrades the specified ICR component.

Note:

- The system does not display the upgrade progress. Therefore, wait until the upgrade process completes.
- If you upgrade the ICR components using the silent installer, the uninstaller uninstalls all the ICR components silently.

Next steps

1. Verify that the `httpd` service is configured for an auto start.

Enter the following command to check the auto start status of the httpd service:

```
chkconfig httpd – –list
```

Command output:

```
httpd      0:off   1:off   2:on    3:on    4:on    5:on    6:off
```

In the command output, check that the levels 2 to 5 display the status as *on*.

If the status for the levels 2 to 5 is *off*, configure the httpd service for auto start using the following command:

```
chkconfig httpd on
```

2. Reboot the system where you upgraded the ICR components and verify that the following services are running:

   - Experience Portal Manager service:

     ```
     service vpms status
     ```

   - ICR CCA service:

     ```
     service icrcca status
     ```

   - ICR Core services:

     ```
     service icrcore status
     service terracottaSrv status
     service icrwebservice status
     ```

Chapter 5: Configuring Avaya Aura® Communication Manager

Log in to the CM server

Log in to the CM server and select the SAT terminal type as **SUNT**.

For details on connecting to CM server using Putty, refer to *Administering Avaya Aura® Communication Manager* document from the Support site at http://support.avaya.com.

Adding Session Manager IP Address

Configure Communication Manager to communicate with Session Manager. Add the Session Manager IP address to Communication Manager node-names list.

Procedure

1. Log in to the Communication Manager system and select the SAT terminal type as **SUNT**.
2. On the SAT session, in the `Command:` prompt, type `change node-names ip` and press `Enter`.
   The system displays the IP NODE Names screen.
3. Use the **up** or **down** arrow key and scroll to a blank line.
4. In the **Name** column, type the name of the Session Manager server.
5. In the **IP address** field, type the IP address of the Session Manager Security Module.

   Note:

   Do not use the management IP address in the **IP address** field.

   The IP NODE Names screen displays the information similar to the following:

```
================================================================================
======
change node-names ip                                      Page   1 of   2
IP NODE NAMES
```

```
Name                IP Address
ASM_Server_Name     192.168.1.11
default             0.0.0.0
procr               192.168.1.12
procr6              ::

( 5  of 5  administered node-names were displayed )
Use 'list node-names' command to see all the administered node-names
Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-
name
================================================================================
=====
```

6. Press `F3` key to save the changes.

Creating a signaling-group

Configure signaling–group on Communication Manager.

Procedure

1. On the SAT session, in the `Command:` terminal, type `add signaling-group n` and press `Enter`.
   The system displays the **SIGNALING GROUP** screen.

   The *n* is the signaling-group number.
2. Use the **up** or **down** arrow key and scroll to the **Group Type** option.
3. In the **Group Type** option, type `SIP` and press tab key.
   The **SIGNALING GROUP** screen displays the information similar to the following:

```
================================================================================
===
add signaling-group n                                        Page   1 of   1

SIGNALING GROUP

Group Number: 2       Group Type: sip
IMS Enabled? n        Transport Method: tcp
Q-SIP? n              SIP Enabled LSP? n

Enforce SIPS URI for SRTP? y
Peer Detection Enabled? y  Peer Server: Others



Near-end Node Name: procr         Far-end Node Name: ASM_SERVER_NAME
Near-end Listen Port: 5060        Far-end Listen Port: 5060
                                  Far-end Network Region:

Far-end Domain:
                                       Bypass If IP Threshold Exceeded? n
Incoming Dialog Loopbacks: eliminate     RFC 3389 Comfort Noise? n
        DTMF over IP: rtp-payload       Direct IP-IP Audio Connections? y
Session Establishment Timer(min): 3      IP Audio Hairpinning? n
```

```
         Enable Layer 3 Test? n           Initial IP-IP Direct Media? n
H.323 Station Outgoing Direct Media? n    Alternate Route Timer(sec): 6


F1=Cancel F2=Refresh F3=Submit F4=Clr Fld F5=Help F6=Update F7=Nxt Pg
F8=Prv Pg
================================================================================
======
```

4. Update the following values:

Group Type	SIP
Transport Method	TLS or TCP. **Note:** Ensure that you set the same value for transport method while configuring Entity link on Session Manager
Near-end Node Name	procr **Tip:** This is the Communication Manager node name.
Near-end Listen Port	An unused port number for the near-end listen port.
Far-end Node Name	**Tip:** This is the node name configured for Session Manager.
Far-end Listen Port	An unused port number for the far-end listen port.
Far-end Network Region	The number of the network region that is assigned to the far-end of the signaling group. The region is used to obtain the codec set used for negotiation of trunk bearer capability.
Far-end Domain	The name of the IP domain that is assigned to the far-end of the signaling group.

5. Press `F3` key to save the changes.

Creating a Trunk group

Procedure

1. On the SAT session, in the `Command:` terminal, type `add trunk-group n` and press `Enter`. The *n* is the trunk group number. The **TRUNK GROUP** screen appears.
2. Use the **up** or **down** arrow key and scroll to Group Type option. In the *Group Type* option, type `SIP`. Press **TAB** key.
3. The **TRUNK GROUP** screen displays the information similar to the one provided below.

```
add trunk-group n                                        Page   1 of  22
                         TRUNK GROUP

Group Number: 2              Group Type: sip       CDR Reports: y
Group Name: trunk to ASM     COR: 1        TN: 1        TAC: #2
Direction: two-way        Outgoing Display? n
Dial Access? n                        Night Service:
Queue Length: 0
Service Type: tie                     Auth Code? n

                                      Signaling Group: 2
                                      Number of Members: 255
```

4. Update the following values:

Group Type	sip
Signaling Group	Signaling Group **Note:** This value must be configured with the Signaling Group value created previously.
Number of Members	This value will be the number of ports for this SIP connection
Service Type	Tie
TAC	Enter the Trunk Access Code as per dial plan

5. Press `F7` key to go to the next page. There are no changes required on screen 2.
6. Press `F7` key to go to the next page. In Page 3 of 22, the following information is displayed:

```
                                                         Page   3 of  22
TRUNK FEATURES
   ACA Assignment? n            Measured: none
                                   Maintenance Tests? y
```

```
          Numbering Format: public
                                  UUI Treatment: shared
                                  Maximum Size of UUI Contents: 128
                                  Replace Restricted Numbers? n
                                  Replace Unavailable Numbers? n


                               Modify Tandem Calling Number: no
              Send UCID? y


Show ANSWERED BY on Display? y
```

7. Update the following values:

UUI Treatment	This value must be set to *shared*.
Send UCID	Set to Yes

8. Press `F3` key to save the changes.

Creating Hunt group

Procedure

1. On the SAT session, in the `Command:` terminal, type `add hunt-group n` and press `Enter`. The *n* is the hunt group number. The HUNT GROUP screen appears.
   Use the **up** or **down** arrow key to scroll.
2. Update the following values:

Group Number	Numeric value
Group Extension	Extension of the group
ACD?	Y
Vector?	Y
Queue?	Y

The HUNT GROUP screen displays the information similar to the one provided below.

```
add hunt-group n                                        Page   1 of   4
                                  HUNT GROUP

        Group Number: 1                                   ACD? y
```

```
        Group Name: english                          Queue? y
        Group Extension: 2000                       Vector? y
        Group Type: ucd-mia
                  TN: 1
                  COR: 1                MM Early Answer? n
        Security Code:                  Local Agent Preference? n
ISDN/SIP Caller Display:

             Queue Limit: unlimited
 Calls Warning Threshold:      Port:
  Time Warning Threshold:      Port:
```

3. Press `F7` to go to the next page.
4. Use the **up** or **down** arrow key to scroll. Type the value of the parameter skill? as *Y*.
   The HUNT GROUP screen displays the information similar to the one provided below.

```
add hunt-group n                                          Page   2 of   4
                                HUNT GROUP

               Skill? y      Expected Call Handling Time (sec): 180
                 AAS? n        Service Level Target (% in sec): 80 in 20
               Measured: internal
   Supervisor Extension:


   Controlling Adjunct: none


      VuStats Objective:
 Timed ACW Interval (sec):
 Multiple Call Handling: none
```

5. Press `F3` to save the changes.

Creating a Vector for polling VDN

ICR uses this vector for the Best Service Routing (BSR) polling.

Procedure

1. On the SAT session, in the `Command:` terminal, type `change vector n` and press `Enter`.
   The system displays the CALL VECTOR screen.

   The *n* is the number of the vector being created.
2. Use the **up** or **down** arrow key and scroll to *01* option.
3. Type *Consider* and press the `TAB` key.

This value is added to consider the hunt-group for agents already configured in Communication Manager.

4. Type the required value in the *skill* option and press the **TAB** key.
5. Type the required value in the *pri m adjust-by* option and press the **TAB** key.
6. Use the **up** or **down** arrow key and scroll to *02* option.
7. Type *reply-best* and press `Enter`.
8. Use the **up** or **down** arrow key and scroll to *03* option.
9. Type *stop* and press `Enter`.

   The system displays the following information:

```
change vector n                                          Page   1 of   6
                              CALL VECTOR

Number: 1                Name: polling vector
                                                                  Lock? n
Basic? y  EAS? y  G3V4 Enhanced? y   ANI/II-Digits? y  ASAI Routing? y
Prompting? y   LAI? y G3V4 Adv Route? y  CINFO? y  BSR? y  Holidays? y
Variables? y   3.0 Enhanced? y
01 consider     skill    1    pri m adjust-by 0
02 reply-best
03 stop
04
05
06
07
08
09
10
11
12

                         Press 'Esc f 6' for Vector Editing
```

10. Press `F3` key to save the changes.

Creating a Vector for Queuing VDN

This vector is used to queue the call.

Procedure

1. On the SAT session, in the `Command:` terminal, type `change vector n` and press `Enter`. The *n* is the number of the vector being created for Queuing. The **CALL VECTOR** screen appears.

Note:

You must provide a Name for the vector.

2. Use the **up** or **down** arrow key and scroll to *01* option. Type *queue-to* and press the TAB key. This value is added to queue the hunt-group for agents already configured in CM.
3. Type the required value in the *skill* option and press the **TAB** key.
4. Type the required value in the *pri m adjust-by* option and press the **TAB** key.
5. Use the **up** or **down** arrow key and scroll to *02* option. Type *stop* and press Enter.
6. A screen similar to the one provided below is displayed:

```
change vector n                                        Page   1 of   6
                                  CALL VECTOR

Number: 2                Name: Queue Vector
                                                                 Lock? n
Basic? y  EAS? y  G3V4 Enhanced? y  ANI/II-Digits? y  ASAI Routing? y
Prompting? y  LAI? y  G3V4 Adv Route? y  CINFO? y  BSR? y Holidays? y
Variables? y   3.0 Enhanced? y
01 queue-to     skill 1    pri m
02 stop
03
04
05
06
07
08
09
10
11
12

                    Press 'Esc f 6' for Vector Editing
```

7. Press F3 key to save the changes.

Note:

The queuing vector must not have any music or ring-back treatments setup, or the EPM will prematurely REFER the call media path down to the Communication Manager before an agent is ready to answer.

Creating a Polling VDN

About this task

This VDN is used as a polling VDN while configuring skill on the ICR configuration page.

Procedure

1. On the SAT session, in the `Command:` terminal, type `add vdn n` and press `Enter`. The *n* is the number of the VDN created. The VECTOR DIRECTORY NUMBER screen appears.
2. Use the **up** or **down** arrow key to scroll. In the first page, provide the following information:
   - VDN name
   - Vector number that this VDN will use. Set the value of this field to the value of the Vector that was created in Creating a Vector for polling VDN on page 78.
3. The first screen of VECTOR DIRECTORY NUMBER displays the information similar to the one provided below.

```
add vdn n                                              Page   1 of   3
                     VECTOR DIRECTORY NUMBER

                          Extension: n
                          Name*: polling vdn
                          Destination: Vector Number        1


                     Allow VDN Override? n
                                   COR: 1
                                   TN*: 1
                              Measured: none


        VDN of Origin Annc. Extension*:
                            1st Skill*:
                            2nd Skill*:
                            3rd Skill*:



* Follows VDN Override Rules
```

4. Press `F7` to go to the next page.
5. Use the **up** or **down** arrow key to scroll. In the second page, provide the following information:
   - BSR Available Agent Strategy. This is used for multiple skills configured in the VDN.
   - BSR Tie Strategy. This is used in case a tie happens.
6. Set all the other options to *N*.
7. The second screen of VECTOR DIRECTORY NUMBER displays the information similar to the one provided below.

```
add vdn n                                              Page   2 of   3
                           VECTOR DIRECTORY NUMBER

                                    AUDIX Name:
                          Return Destination*:
                     VDN Timed ACW Interval*:
                             BSR Application*:
```

```
              BSR Available Agent Strategy*: 1st-found
                          BSR Tie Strategy*: system

                     Observe on Agent Answer? n

  Send VDN as Called Ringing Name Over QSIG? n

                Display VDN for Route-To DAC*? n
             VDN Override for ASAI Messages*: no

                        BSR Local Treatment*? n

           Reporting for PC Predictive Calls? n
            Pass Prefixed CPN to VDN/Vector*? system
* Follows VDN Override Rules
```

8. Press F3 to save the changes.

Creating a Queue VDN

About this task

This VDN is used as a Queue VDN while configuring skill on ICR configuration page.

Procedure

1. On the SAT session, in the Command: terminal, type add vdn n and press Enter. The n is the number of the VDN created. The VECTOR DIRECTORY NUMBER screen appears.
2. Use the **up** or **down** arrow key to scroll. In the first page, provide the following information:
   - Queue VDN name
   - Vector number that this VDN will use. Set the value of this field to the value of the Vector that was created in Creating a Vector for Queuing VDN on page 79.
3. The first screen of VECTOR DIRECTORY NUMBER displays the information similar to the one provided below.

```
add vdn n                                                Page   1 of   3
                            VECTOR DIRECTORY NUMBER

                              Extension: n
                                  Name*: queuing vdn
                            Destination: Vector Number        1


                       Allow VDN Override? n
                                     COR: 1
                                     TN*: 1
                               Measured: none
```

```
        VDN of Origin Annc. Extension*:
                            1st Skill*:
                            2nd Skill*:
                            3rd Skill*:



* Follows VDN Override Rules
```

4. Press `F7` to goto the next page.
5. Use the **up** or **down** arrow key to scroll. In the second page, provide the following information:
   - BSR Available Agent Strategy. This is used for multiple skills configured in the VDN.
   - BSR Tie Strategy. This is used in case a tie happens.
6. Set all the other options to *N*.
7. The second screen of VECTOR DIRECTORY NUMBER displays the information similar to the one provided below.

```
add vdn n                                                 Page   2 of   3
                          VECTOR DIRECTORY NUMBER

                                AUDIX Name:
                           Return Destination*:
                      VDN Timed ACW Interval*:
                            BSR Application*:
               BSR Available Agent Strategy*: 1st-found
                          BSR Tie Strategy*: system

                     Observe on Agent Answer? n

  Send VDN as Called Ringing Name Over QSIG? n

               Display VDN for Route-To DAC*? n
             VDN Override for ASAI Messages*: no

                         BSR Local Treatment*? n

           Reporting for PC Predictive Calls? n
            Pass Prefixed CPN to VDN/Vector*? system
* Follows VDN Override Rules
```

8. Press `F3` to save the changes.

Adding the Queuing VDN to public unknown numbering plan

You must add the Queuing VDN to the Public Unknown numbering plan of Communication Manager so that, when responding to SIP commands associated to this VDN, Communication Manager can send the number in the messages.

Procedure

1. On the SAT session, in the `Command:` terminal, type `change public-unknown-numbering 0` and press `Enter`.
   The system displays the NUMBERING - PUBLIC/UNKNOWN FORMAT screen.
2. Use the **up** or **down** arrow key to scroll.
   On the first page, provide the following information:
   - Ext Len
   - Ext Code
   - Trk Grp(s)
   - Total CPN Len

   The first screen of NUMBERING - PUBLIC/UNKNOWN FORMAT displays the information similar to what is provided below.

```
change public-unknown-numbering 0                       Page   1 of   2
                     NUMBERING - PUBLIC/UNKNOWN FORMAT
                                          Total
Ext Ext       Trk      CPN         CPN
Len Code      Grp(s)   Prefix      Len
                                   Total Administered: 1
 5  8                              5        Maximum Entries: 240

                                  Note: If an entry applies to
                                        a SIP connection to Avaya
                                        Aura(tm) Session Manager,
                                        the resulting number must
                                        be a complete E.164 number.
```

3. Press `F3` key to save the changes.

Adding the IP Network Region

You must define the Authoritative Domain name on the IP-network-region form.

Procedure

1. On the SAT session, in the `Command:` prompt, type `change ip-network-region 1` and press `Enter`. The IP NETWORK REGION screen appears.
2. Use the **up** or **down** arrow key to scroll. In the first page, provide the following information:
   - Define the Authoritative Domain name.
3. The first screen of IP NETWORK REGION displays the information similar to the one provided below.

```
change ip-network-region 1                                Page   1 of  20
                                IP NETWORK REGION
```

```
Region: 1
Location:         Authoritative Domain: avaya.com
Name:
MEDIA PARAMETERS             Intra-region IP-IP Direct Audio: yes
      Codec Set: 1           Inter-region IP-IP Direct Audio: yes
   UDP Port Min: 2048                      IP Audio Hairpinning? n
   UDP Port Max: 3329
DIFFSERV/TOS PARAMETERS
 Call Control PHB Value: 46
        Audio PHB Value: 46
        Video PHB Value: 26
802.1P/Q PARAMETERS
 Call Control 802.1p Priority: 6
        Audio 802.1p Priority: 6
        Video 802.1p Priority: 5   AUDIO RESOURCE RESERVATION PARAMETERS
H.323 IP ENDPOINTS                                   RSVP Enabled? n
H.323 Link Bounce Recovery? y
Idle Traffic Interval (sec): 20
Keep-Alive Interval (sec): 5
         Keep-Alive Count: 5
```

4. Press `F3` key to save the changes.

Adding the IP codec set

You must add the IP codec set in Communication Manager to establish successful RTP path with the customer.

Procedure

1. On the SAT session, in the `Command:` prompt, type `change ip-codec-set n` and press `Enter`. The *n* is the ip codec set number. The IP Codec Set screen appears.
2. Use the **up** or **down** arrow key to scroll. In the first page, provide the following information:
   - Audio Codec
   - Silence Suppression
   - Frames Per Packet
   - Packet Size in milliseconds
3. The first screen of IP Codec Set displays the information similar to the one provided below.

```
change ip-codec-set 1                                        Page   1 of   2

                           IP Codec Set

    Codec Set: 1

    Audio        Silence      Frames   Packet
    Codec        Suppression  Per Pkt  Size(ms)
```

```
1: G.729              n          2         20
2: G.711A             n          2         20
3: G.729A             n          2         20
4: G.711MU            n          2         20
5:
6:
7:
```

4. Press the F3 key to save the changes.

Chapter 6: Configuring Avaya Aura® Session Manager

This chapter provides Session Manager configuration for ICR. However, for more information, see *Administering Avaya Aura ® Session Manager* document from the support site at http://support.avaya.com.

Logging on to System Manager Web Console

Before you begin

Obtain a user account to log on to the System Manager Web interface. If you do not have a user account, go to the Avaya Support website at https://support.avaya.comto create your account.

About this task

System Manager Web Console is the main interface of Avaya Aura® System Manager. To perform any tasks, you must log on to System Manager Web Console.

Important:

On System Manager Web Console, do not use the back arrow on the top-left corner of the browser to navigate to the previous page. If you click the back arrow, the system might exhibit an inconsistent and unexpected behavior.

Procedure

1. On the Web browser, enter the System Manager URL `https://<Fully Qualified Domain Name>/SMGR`.
2. In the **User ID** field, enter the user name.
3. In the **Password** field, enter the password.
4. Click **Log On**.

   The system validates the username and password with the System Manager user account. Depending on the validity, the system displays one of the following screens:

   - If the username and password match, the system displays the System Manager home page with the System Manager *version_number*. The System Manager home page displays the navigation menu. The menu provides access

to shared services to perform various operations that System Manager supports. The tasks you can perform depends on your user role.

- If the username and password does not match, System Manager displays an error message and prompts you to re-enter the user name and password.

Adding a SIP domain

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
   - For System Manager 5.2, select **Network Routing Policy** > **SIP Domains**
   - For System Manager 6.x, select **Routing** > **Domains**
3. On the Domain Management page, click **New**.
4. Enter the domain name and notes for the new domain or sub-domain.
5. Select **sip** as the domain type from the drop-down list.
6. Click **Commit**.

Adding SIP Entities

Adding SIP Entity for SIP Gateway or Session Border Controller (SBC)

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
   - For System Manager 5.2, select **Network Routing Policy > SIP Entities**

On the SIP Entities Details page, click **New** to add the SIP Entity details.

- For System Manager 6.x, select **Routing > SIP Entities**

  On the SIP Entities Details page, click **New** to add the SIP Entity details.

3. On the Details page, add the SIP Entities information.

Parameter	Value
Name	Name of the SIP Gateway or Session Border Controller. This name must be unique and can have between 3 and 64 characters.
FQDN or IP Address	IP address of the SIP Gateway or Session Border Controller configured in the signaling–group on CM.
TYPE	Gateway
Notes	Additional notes about the SIP entity.
Location	SIP entity location. Select from previously defined locations.
Time Zone	Default time zone to be used for the entity.
SIP Link Monitoring	Select the process for SIP Link monitoring.

4. Click **Commit** to save the configurations.

Adding SIP Entities for Communication Manager

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
   - For System Manager 5.2, select **Network Routing Policy** > **SIP Entities**

     On the SIP Entities Details page, click **New** to add the SIP Entities information for Communication Manager.
   - For System Manager 6.x, select **Routing** > **SIP Entities**

On the SIP Entities Details page, click **New** to add the SIP Entities information for Communication Manager.

3. On the Details page, add the SIP Entities information.

Parameter	Value
Name	Name of the CM server. This name must be unique and can have between 3 and 64 characters.
FQDN or IP Address	IP address of the CLAN/Procr configured in the signaling–group on CM
TYPE	CM
Notes	Additional notes about the SIP entity.
Location	SIP entity location. Select from previously defined locations.
Time Zone	Default time zone to be used for the entity.
SIP Link Monitoring	Select the process for SIP Link monitoring.

4. Click **Commit** to save the configurations.
   Perform these steps to create SIP Entities for all the required CM servers.

Adding SIP Entity for Avaya Aura® Experience Portal

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
   - For System Manager 5.2, select **Network Routing Policy** > **SIP Entities**

     On the SIP Entities Details page, click **New** to add the SIP Entities information for Avaya Aura® Experience Portal.
   - For System Manager 6.x, select **Routing > SIP Entities**

     On the SIP Entities Details page, click **New** to add the SIP Entities information for Avaya Aura® Experience Portal.
3. On the Details page, add the SIP Entities information.

Parameter	Value
Name	Name of the Avaya Aura® Experience Portal server. This name must be unique and can have between 3 and 64 characters.
FQDN or IP Address	IP address of Media Processing Platform. If you have multiple Media Processing Platform then add all Media Processing Platform with a single FQDN under Local Host Name configured.
TYPE	Avaya Aura® Experience Portal
Notes	Additional notes about the SIP entity.
Location	SIP entity location. Select from previously defined locations.
Time Zone	Default time zone to be used for the entity.
SIP Link Monitoring	Select the process for SIP Link monitoring.

4. Click **Commit** to save the configurations.

Adding SIP Entities for ICR Core

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
   - For System Manager 5.2, click **Network Routing Policy** > **SIP Entities**

     On the SIP Entities Details page, click **New** to add the SIP Entities information for ICR Core.
   - For System Manager 6.x, click **Routing** > **SIP Entities**

     On the SIP Entities Details page, click **New** to add the SIP Entities information for ICR Core.
3. On the Details page, add the SIP Entities information.

Parameter	Value
Name	Name of the ICR Core Server. This name must be unique and can have between 3 and 64 characters.
FQDN or IP Address	IP address of ICR system. If you have multiple ICR then add all the ICR systems with a single FQDN under the configured Local Host Name.
TYPE	The SIP entity type. Click **Other**.
Notes	Additional notes about the SIP entity.
Location	SIP entity location. Select from the previously defined locations.
Time Zone	Default time zone to be used for the entity.
Credential name	Enter a regular expression string in the Credential name. The Credential name is used for TLS connection validation. You can validate the TLS connection by searching Credential name in the SIP entity identity certificate.
SIP Link Monitoring	Select the process for SIP Link monitoring.

4. Click **Commit** to save the configurations.

Adding SIP Entity links

Adding SIP Entity Link for SIP Gateway or SBC

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:

- For System Manager 5.2, select **Network Routing Policy** > **Entity Links**

  On the Entity Links page, click **New** to add the Entity Links information.

- For System Manager 6.x, select **Routing** > **Entity Links**

  On the Entity Links page, click **New** to add the Entity Links information.

3. On the Links page, add the SIP Entity Links information.

Name	Description
Name	Name of the SIP Entity Link for SIP gateway or SBC. This name must be unique and can have between 3 and 64 characters.
SIP Entity 1	Select a SIP entity from the drop-down list. This entity must always be a Session Manager instance.
Protocol	Protocol to be used for the entity link.
Port	Port to be used for SIP entity 1.
SIP Entity 2	This entity is created for SIP gateway or SBC
Port	Port to be used for SIP gateway or SBC.
Trusted	Specifies that the link between the two SIP entities is trusted. Select the Check box
Notes	Any details or notes that you wish to add.

4. Click **Commit** to save the configurations.

Adding SIP Entity Link for Communication Manager

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
   - For System Manager 5.2, select **Network Routing Policy** > **Entity Links**

On the Entity Links page, click **New** to add the Entity Links information for Communication Manager.

- For System Manager 6.x, select **Routing** > **Entity Links**

  On the Entity Links page, click **New** to add the Entity Links information for Communication Manager.

3. On the Links page, add the SIP Entity Links information.

Name	Description
Name	Name of the SIP Entity Link for Communication Manager server. This name must be unique and can have between 3 and 64 characters.
SIP Entity 1	Select a SIP entity from the drop-down list. This entity must always be a Session Manager instance.
Protocol	Protocol to be used for the entity link.
Port	Port to be used for SIP entity 1.
SIP Entity 2	Select a SIP entity from the field. This is the entity created for CM.
Port	Enter the port for Communication Manager.
Trusted	Specifies that the link between the two SIP entities is trusted. Select this option.
Notes	Any details or notes that you wish to add.

4. Click **Commit** to save the configurations.

Adding SIP Entity Link for Avaya Aura® Experience Portal

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
   - For System Manager 5.2, select **Network Routing Policy** > **Entity Links**.

On the Entity Links page, click **New** to add the Entity Links information for Avaya Aura® Experience Portal.

- For System Manager 6.x, select **Routing** > **Entity Links**.

  On the Entity Links page, click **New** to add the Entity Links information for Avaya Aura® Experience Portal.

3. On the Links page, add the SIP Entity Links information.

Name	Description
Name	Name of the SIP Entity Link for Avaya Aura® Experience Portal server. This name must be unique and can have between 3 and 64 characters.
SIP Entity 1	Select a SIP entity from the drop-down list. This entity must always be a Session Manager instance.
Protocol	Protocol to be used for the entity link.
Port	Port to be used for SIP entity 1.
SIP Entity 2	Select a SIP entity from the field. This is the entity created for MPP.
Port	Port to be used for SIP entity 2.
Trusted	Specifies that the link between the two SIP entities is trusted. Select this option.
Notes	Any details or notes that you wish to add.

4. Click **Commit** to save the configurations.

Adding SIP Entity Link for ICR Core Server

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
   - For System Manager 5.2, select **Network Routing Policy** > **Entity Links**.

     On the Entity Links page, click **New** to add the Entity Links information for ICR server node.

- For System Manager 6.x, select **Routing** > **Entity Links**.

  On the Entity Links page, click **New** to add the Entity Links information for ICR server node.

3. On the Links page, add the SIP Entity Links information.

Name	Description
Name	Name of the SIP Entity Link for ICR Core server. This name must be unique and can have between 3 and 64 characters.
SIP Entity 1	Select a SIP entity from the drop-down list. This entity must always be a Session Manager instance.
Protocol	Protocol to be used for the entity link.
Port	Port to be used for SIP entity 1.
SIP Entity 2	Select a SIP entity from the field. This is the entity created for ICR Core server
Port	Port to be used for SIP entity 2.
Trusted	Specifies that the link between the two SIP entities is trusted. Select this option.
Notes	Any details or notes that you wish to add.

4. Click **Commit** to save the configurations.

Defining Policies and Time of Day

Adding Routing Policy for Communication Manager

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
   - For System Manager 5.2, select **Network Routing Policy** > **Routing Policies**

    - For System Manager 6.x, select **Routing** > **Policies**
3. On the Routing Policies page, click **New** to add the Routing Policy information for Communication Manager.
4. On the Routing Policy Details page, under General, provide the value for *Name* field. You can also provide generic information for reference in the *Notes* field.
5. Under SIP Entity as Destination, click **Select**.
6. From the list of SIP Entities, select the Communication Manager SIP Entity.
7. Under Time of Day, click **Add**.
8. From the Time Ranges List page, select the required `Time Range`.
9. Click **Select**.
   The selected Time Range displays on the Routing Policy Details page.
10. Click **Commit** to save the configuration.

Adding Routing Policy for Avaya Aura® Experience Portal

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
    - For System Manager 5.2, select **Network Routing Policy** > **Routing Policies**
    - For System Manager 6.x, select **Routing** > **Policies**
3. On the Routing Policies page, click **New** to add the Routing Policy information for Avaya Aura® Experience Portal.
4. On the Routing Policy Details page, under General, provide the value for *Name* field. You can also provide generic information for reference in the *Notes* field.
5. Under SIP Entity as Destination, click **Select**.
6. From the list of SIP Entities, select the Avaya Aura® Experience Portal SIP Entity.
7. Under Time of Day, click **Add**.
8. From the Time Ranges List page, select the required `Time Range`.
9. Click **Select**.
   The selected Time Range displays on the Routing Policy Details page.
10. Click **Commit** to save the configuration.

Dial Patterns

Adding dial plan for Avaya Aura® Experience Portal and Communication Manager

About this task

Note:

You must configure a minimum of two dial patterns.

- Pattern to route calls to Experience Portal Manager for incoming calls to Avaya Aura® Experience Portal.
- Pattern to route calls to agents and for polling/queuing VDN's to Communication Manager.

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
   - For System Manager 5.2, select **Network Routing Policy** > **Dial Patterns**
   - For System Manager 6.x, select **Routing** > **Dial Patterns**
3. On the Dial Patterns page, click **New** to add a new Dial Pattern for Avaya Aura® Experience Portal.

   Under General, provide the value for the fields provided in the table.

Name	Description
Pattern	Dial pattern to match. The pattern can have between 1 and 36 characters. Roll over the field for the valid pattern.
Min	Minimum number of digits to be matched.
Max	Maximum number of digits to be matched.
SIP Domain	Domain for which you want to restrict the dial pattern.
Notes	Other details that you wish to add.

4. Under Originating Locations and Routing Policies, click **Add**.
5. Under Originating Location, select the originating location.
6. Under Routing Policies, select the routing policy.
7. Click **Select**.
8. Click **Commit** to save the configuration.

Adding ICR user on System Manager

About this task

Configure the User Name and Password for the ICR Core Server. If ICR Core server is not marked as trusted while configuring Entity Link between ICR Core server and SM then the created SIP user is used during BSR polling. By default, the SIP user name is avaya and password avaya123. This information is stored in `../ICR/ICRCore/tomcat/conf/icrcore.properties` file. Administrator can configure another SIP user and edit the property file.

Procedure

1. Log in to the System Manager Web interface with the Administration user role.
2. From the System Manager main menu:
   - For System Manager 5.2, select **User Management** > **User Management** .
   - For System Manager 6.x, select **Users** > **Manage Users**.
3. On the User Management page, under Users, click **New**.
4. Under General, provide the following information.

Name	Description
Last Name	avaya
First Name	avaya
Description	
User Type	Select as Communication User

5. Under Identity, provide the following information.

Name	Description
Login Name	Enter login name as avaya

Name	Description
Authentication Type	Select as Basic
SMGR Login Password	Enter the password as avaya123
Password	avaya123
Confirm Password	avaya123
Shared Communication Profile Password	avaya123
Confirm Password	avaya123

6. Under Communication Profilesection, under Communication Address, click **New**. Add the user name as avaya.
7. In the **Type** field, select **Avaya SIP**.
8. Add appropriate values to set **Fully Qualified Address**.
9. Click **Add**.
10. In the Communication Profile section, select **Session Manager Profile**.
11. From the field, select the **Primary Session Manager** and **Secondary Session Manager** (if required).
12. Click **Commit** to save the user's information.

Chapter 7: Configuring Avaya Aura® Experience Portal

About configuring Avaya Aura® Experience Portal

ICR Core reads the SIP proxy server configuration from the VoIP Connections Web page of Avaya Aura® Experience Portal. ICR is a managed application of Avaya Aura® Experience Portal. Therefore, Media Processing Platform (MPP) and Speech servers are already configured on Avaya Aura® Experience Portal. To check the configuring details of the MPP servers and the Speech servers, see the Avaya Aura® Experience Portal documentation.

Related topics:

Adding a SIP connection for Session Manager on page 101

Adding a SIP connection for Session Manager

Procedure

1. Log on to an Experience Portal Manager Web page using an account with the Administration or ICR Administration role.
2. From the Experience Portal Managermain menu in the left navigation pane, click **System Configuration** > **VoIP Connections**.
3. On the VoIP Connections page, click the **SIP** tab.
4. Click **Add**.
5. On the Add SIP Connection page, enter the values in the following fields.

Field	Description
Name	Enter appropriate name for SIP connection.
Enable	Default value is Yes.
Proxy Transport	TCP or TLS as per configuration.

Field	Description
Proxy Services Address	Enter the IP address of Security module of Session Manager.
DNS SRV Domain	Enter the domain name of the DNS server. For example, `abc.com`.
SIP Domain	Enter the domain of Session Manager.
Maximum Simultaneous Calls	The maximum number of calls that this trunk can handle at one time.

6. Click **Save**.

Chapter 8: Installing ICR Pluggable Data Connector

ICR Pluggable Data Connector

ICR Pluggable Data Connector (PDC) is a connector between Self Service Application (SSA) and ICR Core. ICR PDC is built to integrate ICR into Orchestration Designer. ICR PDC is a generic connector, which an application developer can use without knowledge of call centers and ICR Core. ICR PDC provides a SIP URI, which is the routing destination for a skill.

ICR PDC also does the load balancing of skill selection requests that arrives across multiple ICR Cores.

Prerequisite

Orchestration Designer to create and build applications.

If you are installing Orchestration Designer for the first time, see the *Orchestration Designer* documentation from the Avaya support site at http://support.avaya.com.

Copying ICR PDC to the plugins folder in Orchestration Designer

Procedure

Copy `com.avaya.icr.PDC.ui.jar` file from `ICRPDC` folder on the CD to `<Eclipse_Home>/plugins` folder.

Note:

Close the Eclipse application before copying the file to the plugins folder.

Importing sample applications in Eclipse

Procedure

1. Copy the `SampleApps.zip` file from the ISO image of ICR to a temporary location.
2. Unzip the `SampleApps.zip` file in a directory to extract the sample applications.

   After you unzip the `SampleApps.zip` file, the directory contains the following sample applications:

Sample Application Name	Description
SSA	This folder contains sample application for Sample Self Service Application.
WTA	This folder contains two sample Wait Treatment Applications. • **WTAUpdateAAI**: Demonstrates how to collect additional information from a caller and pass that information to CCA. • **WTAWaitTimeAnouncement**: Demonstrates how to prompt estimated wait time and queue position.
EHA	This folder contains two sample Error Handling Applications. • **EHAGeneric**: Prompts generic error messages to a caller. • **EHAOutOFHours**: Prompts error message for calls coming in out of business hours.

3. Open the Eclipse application.
4. In the Eclipse application, click **File** > **Import**.
5. Select **Existing Project into WorkSpace** and click **Next**.
6. Enable the **Select root directory** option.
7. Click **Browse**.

   Note:

   Browse to the directory where you have extracted the sample applications.
8. Select the `SSA` folder.

9. Click **Finish**.
10. On the Runtime Version Mismatch window, click **OK**.
11. Perform the above steps to import all the sample applications that you extracted.

Enabling ICR Pluggable Data Connector plug-in for the SSA application

Procedure

1. Open the Eclipse application.
2. In the Eclipse SDK application, select the Sample Self Service Application (SSA).
3. Select **Project** > **Properties**.
4. On the Properties for SSA window, in the right pane, under Orchestration Designer, click the **Pluggable Connectors** tab.
5. From the list of connectors, select *ICR Connector*.
6. Click **OK**.
7. Open the main flow of the SSA application.
8. Double-click **GetDestinationInformation** data node.

   Note:

   ICR connector appears in the Palette pane. The `Get Destination` method of ICR connector accepts the Skill as an input parameter.
9. Application developer can drag and drop `Get Destination` method to any data node in the application as per the business need.

Chapter 9: Upgrading ICR Pluggable Data Connector

ICR Pluggable Data Connector

ICR Pluggable Data Connector (PDC) is a connector between Self Service Application (SSA) and ICR Core. ICR PDC is built to integrate ICR into Orchestration Designer. ICR PDC is a generic connector, which an application developer can use without knowledge of call centers and ICR Core. ICR PDC provides a SIP URI, which is the routing destination for a skill.

ICR PDC also does the load balancing of skill selection requests that arrives across multiple ICR Cores.

You must upgrade ICR PDC in every SSA to avail enhanced ICR PDC. Once you upgrade ICR PDC you must deploy SSA on Application Server.

Prerequisite

Orchestration Designer with ICR PDC to create and build applications.

If you are installing Orchestration Designer for the first time, see the *Orchestration Designer* documentation from the Avaya support site at http://support.avaya.com.

Upgrading ICR Pluggable Data Connector

Procedure

1. Start the Orchestration Designer Eclipse application.
2. Select the Self Service Application (SSA) project.
3. Select **Project** > **Properties**.
4. On the Properties for SSA window, in the left pane select Orchestration Designer then in the right pane, under Orchestration Designer, click the Pluggable Connectors tab.
5. From the list of connectors, clear the **ICR Connector** check box and click **OK**.
6. Close the Orchestration Designer Eclipse application.

7. Delete the existing com.avaya.icr.PDC.ui.jar file from `<Eclipse_Home>/plugins` folder.
8. Start the Eclipse application.
9. Close the Eclipse application.
10. Copy the com.avaya.icr.PDC.ui.jar file from ICRPDC folder on the CD to `<Eclipse_Home>/plugins` folder.

Next steps

You must enable the upgraded ICR PDC for SSA. See Enabling the upgraded ICR Pluggable Data Connector on page 108.

Enabling ICR Pluggable Data Connector plug-in for the SSA application

Procedure

1. Open the Eclipse application.
2. In the Eclipse SDK application, select the Sample Self Service Application (SSA).
3. Select **Project** > **Properties**.
4. On the Properties for SSA window, in the right pane, under Orchestration Designer, click the **Pluggable Connectors** tab.
5. From the list of connectors, select *ICR Connector*.
6. Click **OK**.

Note:

Once you upgrade ICR PDC in SSA, deploy SSA on Application Server. For more information about deploying SSA, see *Application Deployment* topic in the *Orchestration Designer Developer guide*.

Chapter 10: Application Server

About application server

Deploy ICR CCA dependent applications, such as SSA, WTAs, and EHAs on an application server. For information about deploying the dependant application, see the *Application Deployment* topic in the Orchestration Designer developer guide.

After you complete deploying the application server, fetch the ICR Core certificates. For more information, see Importing ICR Core certificate on the application server on page 109.

Importing ICR Core certificate on the application server

Procedure

1. Start the application server.
2. On the application server, open the run-time config application in a browser.
   For example: `http://localhost:8080/runtimeconfig`.
3. Log on to the Orchestration Designer system with administrator privileges.
4. In the left pane, click **Certificates**.
5. At the bottom of the page, click **Fetch**.
6. On the Fetch certificate page, enter the values for the following fields in the **Fetch New Certificate** area.
   - **Name**: The name of the certificate.
   - **Location**: The IP address or host name of the ICR Core system. For example, For example: https://<IP_Address_of_the_ICR_Core_system>.
7. Click **Continue**.
8. Click **Save**.
9. Restart the application server.
   The Application server must be able to communicate with ICR Core server.

Note:

Add the IP address and the host names of the ICR Core system in the `/etc/hosts` file of the application server.

Chapter 11: Configuring ICR properties

ICR Core property file description

The following table provides information about the ICR Core properties in the `icrcore.properties` file. The `icrcore.properties` file is present in the *`$AVAYA_ICCORE_HOME`*`/tomcat/conf` directory.

Property name	Description	Default value	Possible value
ICRAdminURL	The IP address of the Experience Portal Manager system where the ICR Admin component is deployed. ICR Core uses the ICRAdminURL property to obtain the ICR configuration.	The IP address of the primary Experience Portal Manager system that you entered when installing ICR Core.	The IP address of the primary Experience Portal Manager system.
VPRemoteLogWebService	The Web service URL that ICR Core uses to post error logs to primary Experience Portal Manager system.	`https://%Primary_EPM_IP_ADDRESS%/axis/services/LogServer-1.0`	Not applicable.
VPProductID	The Product ID of Avaya Aura® Experience Portal. This property is required for pushing log messages from ICR Core to Experience Portal Manager.	The product ID of the primary Experience Portal Manager system that you entered when installing ICR Core.	The product ID of the primary Experience Portal Manager system.
VPRetryAfter	The delay in milliseconds, after which ICR Core retries sending logs to Experience Portal Manager, if the	30000	Not applicable.

Property name	Description	Default value	Possible value
	earlier execution fails to send the logs.		
AGENT_SURPLUS_FRESHNESS_ENABLED	Enabling this property reduces the cache freshness interval for all skills under the agent surplus situation. ICR identifies the agent surplus situation when Communication Manager returns EWT as 0 to ICR when ICR Core is polling for BSR. If you set the value of the property to `true`, ICR Core uses the value of AGENT_SURPLUS_FRESHNESS_INTERVAL property as the cache freshness interval. If you set the value of this property to `false`, ICR Core uses the cache freshness and slack time value configured on the Skills web page in the Experience Portal Manager system.	false	• true • false
AGENT_SURPLUS_FRESHNESS_INTERVAL	Use this property to define the interval for cache freshness under agent surplus situation. **Note:** Setting a low interval value to this property might affect the performance of Communication Manager because based on the value of this property, ICR frequently polls Communication Manager for BSR. Therefore, you must	10	

Property name	Description	Default value	Possible value
	check the traffic to Communication Manager and accordingly set a proper value to this property.		
Optional properties			
ICRSipDebug	Enables SIP debug messages to be printed in the `AvayaICRDebug.log` file. The `AvayaICRDebug.log` file is located in the `$AVAYA_ICRCORE_HOME/tomcat/log` directory.	OFF	• OFF • DEBUG
ICRKeystore	The ICR Core certificate storage location.	*`$AVAYA_ICRCORE_HOME`*`/tomcat/conf/keystore`	Not applicable.
ICRKeyStorePassword	The ICR Core certificate storage password.	changeit	Not applicable.
ICRTrustStore	The certificate storage location.	*`$AVAYA_ICRCORE_HOME`*`/tomcat/conf/truststore`	Not applicable.
ICRTrustStorePassword	The certificate storage password.	changeit	Not applicable.
ICRSipUserName	A Sip account configured on System Manager.	avaya	Enter the SIP user name configured on System Manager if the user name is other than avaya.
ICRSipPassword	A Sip account password configured on System Manager.	avaya123	Enter the password configured on System Manager for SIP user.

Property name	Description	Default value	Possible value
ICRBsrRequestTimeout	The time in milliseconds to wait for all responses of polling request that ICR Core sends.	8000	Change depending upon network delay.
ICRCacheUpdateTimeout	The time in milliseconds to wait for cache update.	1000	**Note:** No change is required.
ICRSchedulerDelay	The time in milliseconds to check availability of ACD or Proxy. The value specifies the delay after which BSR skill module starts the status check for Communication Manager and Avaya Aura® Session Manager that are out of service.	60000	Not applicable.
ICRSipTCPPort	A TCP port that ICR Core uses for SIP communication with proxy.	5060	TCP port for SIP communication with proxy server.
ICRSipTLSPort	A TLS port that ICR Core uses for SIP communication with proxy.	5061	TLS port for SIP communication with proxy server.
ICRLogThrottlingTimeout	The time in milliseconds to suppress subsequent logs.	60000	Not applicable.
ICRDNSPollingTime	The time interval in seconds after which ICR Core queries the DNS server for SIP proxy servers if you configured the SIP connection as DNS SRV domain.	3600	Not applicable.
ICRACDSchedulerEnabled	The value that indicates whether ICR Core monitors the status of ACD or not. **Note:** If you configured multiple IP addresses	false	• false • true

Property name	Description	Default value	Possible value
	of ACD, such as Enterprise Survivable Server (ESS) or CLAN, on Avaya Aura® Session Manager using the **Local Host Name Resolution** option, you must set the ICRACDSchedulerEnabled parameter to false.		
ICRSocketConnectionTimeout	The time in milliseconds for which ICR Core waits for socket connection with the proxy server. On failing to establish a socket connection, ICR Core considers the next available proxy server, if configured.	5000	**Note:** No change is required.
ADJUST_WAT_VALUE	ICR Core uses ADJUST_WAT_VALUE if ICR Core receives WAT = 0 from Communication Manager during polling. ADJUST_WAT_VALUE is used in the adjustment of EWT.	1	Not applicable.

Note:

After making the changes in the `icrcore.properties` file, you must restart ICR Core for the changes to take effect. To restart ICR Core, run the **`service icrcore restart`** command.

ICR CCA property file description

The following table provides information about the ICR CCA properties provided in the `icrcca.properties` file. The `icrcca.properties` file is present in the `$AVAYA_ICRCCA_HOME/tomcat/conf` directory.

Property name	Description	Default value	Possible value
ICRAppConfigWSURL	An ICR Admin URL is used to obtain the ICR configuration.	`https://%ICRAdmin_IP_ADDRESS%/VP_ICRAdmin/services/appconfigreader`	Not applicable.
debug	Enables ICR CCA to log the `<log>` elements in the `CCXML-SessionSlot-XXX.log` file. **Important:** When you set the debug property to true, Media Processing Platform (MPP) creates Application Detail Records (ADR) on MPP. As a result, the disk space utilization increases and the performance of ICR degrades. Therefore, set this property to true only for testing purpose.	false.	• true • false
scheduleInterval	The time in seconds after which CCA checks modification of ICR CCA application configuration.	120	Enter value in seconds as per customer requirement.
prov_timeout	The time in seconds for which CCA waits for the *182 Queued* response for a no media call.	90s	**Note:** Specify the property value followed by *s*, for seconds.
ewtUpdatePercent	If the percentage difference between two successive EWT values is greater than	20	Not applicable.

Property name	Description	Default value	Possible value
	ewtUpdatePercent value, ICR CCA stops and starts the same WTA. ewtUpdatePercent value is used in conjunction with ewtUpdateDiff property.		
ewtUpdateDiff	If the difference between two successive EWT values is greater than the configured ewtUpdateDiff value then, ICR CCA stops and starts the same WTA.	30	Not applicable.
ewtSpikePercent	If the percentage difference between two successive EWT values is greater than the configured ewtSpikePercent value then, ICR CCA stops and starts a new WTA based on the EWT-WTA mapping.	60	Not applicable.
ewtSpikeDiff	If the difference between two successive EWT values is greater than the configured ewtSpikeDiff value then, ICR CCA stops and starts a new WTA based on the EWT-WTA mapping.	180	Not applicable.
queuePositionUpdateDiff	If the difference between two successive queueposition values is greater than the configured queuePositionUpdateDiff value, ICR CCA stops and starts the same WTA.	10	Not applicable.
queuePositionSpikeDiff	If the difference between two successive queueposition values is greater than the configured queuePositionSpikeDiff value, ICR CCA stops and starts a new WTA based on the EWT-WTA mapping.	60	Not applicable.

Property name	Description	Default value	Possible value
agenttimeout	A blind transfer time-out in seconds.	120s	**Note:** Specify the property value followed by *s*, for seconds.
requeuePriority	A priority at which calls are re-queued.	1	The other priorities are: • 4 = low • 3 = medium • 2 = high • 1 = top • 0 = redirect
WebServiceRequestTimeOut	This property defines time out for the web service request made by ICR CCA during a call re queue to ICR Core. If ICR Core does not respond within the time out period, ICR CCA moves to next ICR Core in the system. The time out is configured in seconds.	10	**Note:** If the value is set to the value lesser than the `ICRBsrRequestTimeout` property configured in icrcore.properties then ICR CCA might not wait for ICR Core to perform polling and move to next ICR Core. See ICR Core property file description on page 111.
mergeonconnect	The `mergeonconnect` property value indicates merging a call either when an agent answers the call or when the call rings at the agent phone. • If you set the `mergeonconnect` property to false, ICR CCA merges the call on ringing.	false	• true • false

Property name	Description	Default value	Possible value
	After setting the `mergeonconnect` property to false, if ICR CCA receives the answer event from an agent phone, ICR CCA merges the call because the agent phone configured in auto answer mode might not provide the ringing event. • If you set the `mergeonconnect` property to true, ICR CCA merges the call on answer. When the `mergeonconnect` property is set to true, the customer does not hear the ringing tone and the call gets connected to the agent.		
defaultProtocolDiscriminator	The default value that ICR CCA uses for Protocol Discriminator to construct UUI.	00	• 00 • 04
readProtocolDiscriminatorFromIncomingCall	This property enables ICR CCA to read the protocol discriminator from the incoming call in the Shared UUI mode. If you set the value of this property to true, ICR CCA uses the protocol discriminator value from incoming call to construct UUI. If you set the value of this property to false, ICR CCA uses the default Protocol Discriminator to construct UUI.	false	• true • false

Note:

After making changes in the `icrcca.properties` file, you must restart ICR CCA for the changes to take effect. To restart the ICR CCA, run the **`service icrcca restart`** command.

ICR Admin property file description

This table provides information about the ICR Admin properties available in the `VP_ICRAdmin.properties` file. The `VP_ICRAdmin.properties` file is present in the `$CATALINA_HOME/lib/extensions/ICR/config/` directory.

Property name	Description	Default value	Possible value
securityTrustStore	The ICR Admin truststore file location. SecurityTrustStore file stores the ICR Admin certificate.	/opt/Tomcat/tomcat/conf/truststore	Not applicable.
securityTrustStorePwd	The password for the truststore file.	changeit	Not applicable.
securityKeyStore	The ICR Admin Keystore file location. ICR Admin Keystore file stores the ICR admin certificate.	/opt/Tomcat/tomcat/conf/keystore	Not applicable.
securityKeyStorePwd	The password for the Keystore file.	changeit	Not applicable.
HeartbeatInterval	The time in seconds after which ICR Admin obtains the current state of ICR Core.	30	Not applicable.
HeartbeatRetries	A heartbeat retry count after which ICR Admin marks the ICR Core as OFFLINE.	3	Not applicable.
NodeDelimiter	The property that separates the call records while storing the call record in the in-memory database.	The property shows the HTML encode value for # which is %23	**Note:** No change required.

Property name	Description	Default value	Possible value
AttributeDelimiter	The property that separats different attributes of call records.	The property shows the HTML encode value for comma (',') which is %2C	**Note:** No change required.
QueuedCallConsolidatorSeq	A Queued call data sequence received from MPP.	sessionid,ucid,skillid,callcentername,destination,qpos,ewt,callingno,mppName	**Note:** No change required.
AppCallConsolidatorSeq	An Application call data sequence received from MPP.	sessionid,ucid,appname,apptype,ssaappname,wtaappname,ehaappname,calledno,callingno	**Note:** No change required.
QueuedCallURLFormat	A URL that ICR Admin uses to obtain Queued call information from MPP.	/mpp/sconfig/fetchCallDetail.php?fetchType=queuedcall	**Note:** No change required.
AppCallURLFormat	A URL that ICR Admin uses to obtain Application call information from MPP.	/mpp/sconfig/fetchCallDetail.php?fetchType=appcall	**Note:** No change required.
SummaryCallURLFormat	A URL that ICR Admin uses to obtain Queued call and Application call summary information from MPP.	/mpp/sconfig/fetchCallDetail.php?fetchType=summarycall	**Note:** No change required.
CreateDBFURLFormat	A URL to create database on MPP for collecting data feeds of queued and application calls.	/mpp/sconfig/createCallDetails.php	**Note:** No change required.
ReportPollingInterval	Polling time in milliseconds at which ICR Admin obtains call details from every MPP.	30000	Not applicable.
ReportingConnReadTimeOutInterval	The time for which ICR Admin waits for MPP to fetch call details.	1000	Not applicable.

Property name	Description	Default value	Possible value
ReportPollingWaitTime	The time in milliseconds for which ICR Admin waits for the response from ICR Report Manager to consolidate real time data from all MPP's.	2500	Not applicable.
ReportCacheClearInterval	The time in minutes after which ICR Admin clears the in-memory cached data.	10	Not applicable.
ICRContextRoot	A URL that ICR Admin uses for polling the remote Experience Portal Manager system for real time data.	/VP_ICRAdmin/	**Note:** No change required.
RemoteVpPollingDuration	The time in milliseconds for which every Remote Experience Portal Manager system is polled for real time data. RemoteVpPollingDuration timer starts as soon as you access the ICR monitor page.	600000	Not applicable.
RemoteVPReportPath	A URL that invokes remote Experience Portal Manager systems for updating real time data of Experience Portal Manager system in common reporting database.	report/	**Note:** No change required.
ICRAdminThrottlingTimeOut	The time in minutes after which ICR Admin suppresses the same subsequent ICR reporting logs being	10	Not applicable.

Property name	Description	Default value	Possible value
	sent to Experience Portal Manager.		
EnableRealTimeRawDataLog	A value that enables or disables ICR reporting log throttling.	False	**Note:** No change required.
RemoteDBQueryTimeOut	Time in seconds for which ICR Admin waits for updating and obtaining real time data from the reporting database.	10	Not applicable.
sipInfoSeparator	The property used in EPMSIP table, which stores SIP connection information.	|	**Note:** No change required.
CleanMPPURLFormat	A URL used to clean up call records that does not exist on the MPP database. When queued or application call records are not removed from MPP data, CleanMPPURLFormat sends a delete request to MPP to clean the records based on the configured SAA, WTA, and EHA parameter values. The parameter value is in minutes.	/mpp/sconfig/deleteOldCallDetails.php?ssa=360&wta=15&eha=15 In the URL: • The ssa=360 parameter indicates the ICR Admin cleans the Call records of SSA which does not exist on MPP after 360 minutes. • The wta=15 parameter indicates the ICR Admin cleans the Call records of WTA which does not exist on MPP after 15 minutes. • The eha=15 parameter indicates the ICR Admin cleans the Call records of EHA which does	Not applicable.

Property name	Description	Default value	Possible value
		not exist on MPP after 15 minutes.	
CleanMPPStaleDataInterval	The time interval in minutes after which ICR Admin runs the scheduler for cleaning the call records from the database and the data in the memory, which does not exist on MPP.	15	Not applicable.

Note:

After making changes in the `VP_ICRAdmin.properties` file, you must restart the Experience Portal Manager service.

ICR PDC property file description

The `icrpdc.properties` file is present in the `WEB-INF/lib` directory of Self Service Application (SSA) in Avaya Aura® Orchestration Designer. After making changes to `icrpdc.properties`, you must deploy SSA on Application Server.

Note:

The `icrpdc.properties` file is present in WEB-INF/lib directory of Self Service Application (SSA) on Application Server after the deployment. If you change `icrpdc.properties` on Application Server, you must restart SSA.

The following table provides information about the ICR PDC properties file.

Property name	Description	Default value	Possible value
WebServiceRequestTimeOut	This property defines time out for the web service request made by ICR PDC to randomly selected ICR Core. If ICR Core does not respond within the time out period, ICR PDC moves to next ICR Core in the	10	**Note:** If the value is set to the value lesser than the `ICRBsrRequestTimeout` property configured in icrcore.properties then ICR CCA might

Property name	Description	Default value	Possible value
	system. The time out is configured in seconds.		not wait for ICR Core to perform polling and move to next ICR Core. See ICR Core property file description on page 111.

Chapter 12: Uninstalling Intelligent Customer Routing

Uninstalling ICR components

Uninstalling ICR Admin

Procedure

1. Log on to the Linux system either locally as a root user or remotely as a non-root user and change the user to root by using the **su -** command.
2. If you are an Avaya Services representative and if you are using Avaya Enterprise Linux or if the Avaya Service accounts are installed on this Core system:
   - Log on to the local Linux system as a sroot user.
   - Or log on remotely as a non-root user and change the user to sroot by entering the **su - sroot** command.
3. Type **cd** `$AVAYA_ICRADMIN_HOME/../ICR_Uninstaller` to change the directory and press `Enter`.
4. Type `./Uninstall_ICR -i console` and press `Enter` to start the uninstaller in the console mode.

   Note:

   If you installed ICR using the silent mode, the uninstaller silently uninstalls all the installed ICR components when you invoke the uninstaller by using the command `./Uninstall_ICR`. However, if you run the uninstaller in the console mode using the command `./Uninstall_ICR -i console`, the silent uninstallation displays the uninstallation screens.
5. On the `Uninstall ICR` screen, press `Enter`.

```
===============================================================================
Uninstall ICR
-------------

About to uninstall...
```

```
ICR

This will remove features installed by InstallAnywhere.  It will not
remove files and folders created after the installation.

PRESS <ENTER> TO CONTINUE:
===============================================================================
```

6. On the `Uninstall Options` screen, type `2` to choose specific features to uninstall or type `1` to continue uninstalling all the ICR features and components and press `Enter`.

```
===============================================================================
Uninstall Options
-----------------

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT:

  ->1- Completely remove all features and components.
    2- Choose specific features that were installed by InstallAnywhere.

Please choose one of the following options::
===============================================================================
```

7. On the `Choose Product Features` screen, type the corresponding number to the feature to uninstall ICR Admin and press `Enter`.

```
===============================================================================
Choose Product Features
-----------------------

ENTER A COMMA_SEPARATED LIST OF NUMBERS REPRESENTING THE FEATURES YOU
WOULD LIKE TO SELECT, OR DESELECT.

TO VIEW A FEATURE'S DESCRIPTION, ENTER '?<Number>'  PRESS <Enter> WHEN YOU
ARE DONE:

    1- [ ] ICRAdmin

Check the features that you want to uninstall. Unchecked features will
remain installed.:
===============================================================================
```

8. On the `Uninstall Confirmation` screen, type `1` to confirm the unistallation or type `2` to cancel the uninstallation process and press `Enter`.

```
===============================================================================
Are you sure you want to uninstall feature(s) ICRAdmin?
-------------------------------------------------------

This will uninstall feature(s) ICRAdmin. Select "OK" to continue or
"Cancel" to exit.

  ->1- OK
    2- Cancel

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
===============================================================================
```

The installer displays the `Stopping services for ICRAdmin` screen to confirm about stopping the ICR Admin service. Press `Enter` to continue uninstallation.

```
=============================================================================
Stopping services for ICRAdmin
-----------------------------
Uninstaller will stop running services of respective components before
uninstalling.

PRESS <ENTER> TO CONTINUE:
=============================================================================
```

Wait for the unistallation procedure to complete.

Note:

The uninstaller stops the vpms services for the ICR Admin and removes the selected components installed by the installer. The vpms services are started once the uninstallation is completed. However, the uninstaller does not remove the files and folders created after the installation. You must manually delete the component directories from the installed location after uninstalling ICR component.

9. Log out from the Linux session and open a new Linux session to reinstall ICR. The updated environment variables are available in a new session.

Uninstalling ICR CCA

Procedure

1. Log on to the Linux system either locally as a root user or remotely as a non-root user and change the user to root by using the **`su -`** command.
2. If you are an Avaya Services representative and if you are using Avaya Enterprise Linux or if the Avaya Service accounts are installed on this Core system:
   - Log on to the local Linux system as a sroot user.
   - Or log on remotely as a non-root user and change the user to sroot by entering the **`su -`** `sroot` command.
3. On the screen, type **`cd`** `$AVAYA_ICRCCA_HOME/../ICR_Uninstaller` and press `Enter`.
4. Type `./Uninstall_ICR -i console` and press `Enter` to start the unistaller console mode.

Note:

If you installed ICR using the silent mode, the uninstaller silently uninstalls all the installed ICR components when you invoke the uninstaller by using the

command `./Uninstall_ICR`. However, if you run the uninstaller in the console mode using the command `./Uninstall_ICR -i console`, the silent uninstallation displays the uninstallation screens.

5. On the `Uninstall ICR` screen, press `Enter`.

```
===============================================================================
=
Uninstall ICR
-------------

About to uninstall...

ICR

This will remove features installed by InstallAnywhere.  It will not
remove files and folders created after the installation.
PRESS <ENTER> TO CONTINUE:
===============================================================================
=
```

6. On the `Uninstall Options` screen, type `2` to choose specific features to uninstall or type `1` to continue uninstalling all the ICR features and components and press `Enter`.

```
===============================================================================
=
Uninstall Options
-----------------

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT:

  ->1- Completely remove all features and components.
    2- Choose specific features that were installed by InstallAnywhere.

Please choose one of the following options::
===============================================================================
=
```

7. On the `Choose Product Features` screen, type the corresponding number to the feature to uninstall ICR CCA and press `Enter`.

```
===============================================================================
==
Choose Product Features
-----------------------

ENTER A COMMA_SEPARATED LIST OF NUMBERS REPRESENTING THE FEATURES YOU
WOULD LIKE TO SELECT, OR DESELECT.

TO VIEW A FEATURE'S DESCRIPTION, ENTER '?<Number>'  PRESS <Enter> WHEN YOU
ARE DONE:

    1- [ ] ICRACCA

Check the features that you want to uninstall. Unchecked features will
remain installed.:
===============================================================================
===
```

8. On the `Uninstall Confirmation` screen, type `1` to confirm the unistallation or type `2` to cancel the uninstallation process and press `Enter`.

```
===============================================================================
===
```

```
Are you sure you want to uninstall feature(s) ICRCCA
?
-------------------------------------------------------

This will uninstall feature(s) ICRCCA. Select "OK" to continue or "Cancel"
to exit.

  ->1- OK
    2- Cancel

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
================================================================================
====
```

The installer displays the `Stopping services for ICRCCA` screen to confirm about stopping the ICR CCA service. Press `Enter` to continue uninstallation.

```
================================================================================
====
Stopping services for ICRCCA
-----------------------------
Uninstaller will stop running services of respective components before
uninstalling.

PRESS <ENTER> TO CONTINUE:
================================================================================
====
```

Wait for the unistallation procedure to complete.

Note:

The uninstaller stops the vpms services for the ICR Admin and removes the selected components installed by the installer. The vpms services are started once the uninstallation is completed. However, the uninstaller does not remove the files and folders created after the installation. You must manually delete the component directories from the installed location after uninstalling ICR component.

9. Log out from the Linux session and open a new Linux session to reinstall ICR.
   The updated environment variables are available in a new session.

Uninstalling ICR Core

Procedure

1. Log on to the Linux system either locally as a root user or remotely as a non-root user and change the user to root by using the **`su -`** command.
2. If you are an Avaya Services representative and if you are using Avaya Enterprise Linux or if the Avaya Service accounts are installed on this Core system:

- Log on to the local Linux system as a sroot user.
- Or log on remotely as a non-root user and change the user to sroot by entering the **su** - sroot command.

3. On the screen, type **cd** $AVAYA_ICRCORE_HOME/../ICR_Uninstaller and press Enter.
4. Type ./Uninstall_ICR -i console and press Enter to start the uninstaller in the console mode.

Note:

If you installed ICR using the silent mode, the uninstaller silently uninstalls all the installed ICR components when you invoke the uninstaller by using the command ./Uninstall_ICR. However, if you run the uninstaller in the console mode using the command ./Uninstall_ICR -i console, the silent uninstallation displays the uninstallation screens.

5. On the Uninstall ICR screen, press Enter.

```
===============================================================================
Uninstall ICR
-------------

About to uninstall...

ICR

This will remove features installed by InstallAnywhere.  It will not
remove files and folders created after the installation.

PRESS <ENTER> TO CONTINUE:
===============================================================================
```

6. On the Uninstall Options screen, type 1 to continue uninstalling all the ICR features and components or type 2 to choose specific features to uninstall and press Enter.

```
===============================================================================
Uninstall Options
-----------------

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT:

  ->1- Completely remove all features and components.
    2- Choose specific features that were installed by InstallAnywhere.

Please choose one of the following options::
===============================================================================
```

7. On the Choose Product Features screen, type the corresponding number to the feature to uninstall ICR Core and press Enter.

```
===============================================================================
Choose Product Features
-----------------------

ENTER A COMMA_SEPARATED LIST OF NUMBERS REPRESENTING THE FEATURES YOU
WOULD LIKE TO SELECT, OR DESELECT.

TO VIEW A FEATURE'S DESCRIPTION, ENTER '?<Number>'  PRESS <Enter> WHEN YOU
```

```
ARE DONE:

    1- [ ] ICRCore

Check the features that you want to uninstall. Unchecked features will
remain installed.:
===============================================================================
```

8. On the `Uninstall Confirmation` screen, type `1` to confirm the unistallation or type `2` to cancel the uninstallation process and press `Enter`.

```
===============================================================================
Are you sure you want to uninstall feature(s) ICRCore?
-------------------------------------------------------

This will uninstall feature(s) ICRCore. Select "OK" to continue or
"Cancel" to exit.

  ->1- OK
    2- Cancel

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
===============================================================================
```

The installer displays the `Stopping services for ICRCore` screen to confirm about stopping the ICR Core service. Press `Enter` to continue uninstallation.

```
===============================================================================
Stopping services for ICRCore
------------------------------
Uninstaller will stop running services of respective components before
uninstalling.

PRESS <ENTER> TO CONTINUE:
===============================================================================
```

Wait for the unistallation procedure to complete.

Note:

The uninstaller stops the vpms services for the ICR Admin and removes the selected components installed by the installer. The vpms services are started once the uninstallation is completed. However, the uninstaller does not remove the files and folders created after the installation. You must manually delete the component directories from the installed location after uninstalling ICR component.

9. Log out from the Linux session and open a new Linux session to reinstall ICR.

   The updated environment variables are available in a new session.

Uninstalling ICR components installed on a standalone system

Procedure

1. Log on to the Linux system either locally as a root user or remotely as a non-root user and change the user to root by using the **su -** command.
2. If you are an Avaya Services representative and if you are using Avaya Enterprise Linux or if the Avaya Service accounts are installed on this Core system:
   - Log on to the local Linux system as a sroot user.
   - Or log on remotely as a non-root user and change the user to sroot by entering the **su** - sroot command.
3. Type **cd** $AVAYA_ICRADMIN_HOME/../ICR_Uninstaller to change the directory and press Enter.
4. Type ./Uninstall_ICR -i console and press Enter to start the uninstaller in the console mode.

   Note:

   If you installed ICR using the silent mode, the uninstaller silently uninstalls all the installed ICR components when you invoke the uninstaller by using the command ./Uninstall_ICR. However, if you run the uninstaller in the console mode using the command ./Uninstall_ICR -i console, the silent uninstallation displays the uninstallation screens.
5. On the Uninstall ICR screen, press Enter.

```
===============================================================================
Uninstall ICR
-------------

About to uninstall...

ICR

This will remove features installed by InstallAnywhere.  It will not
remove files and folders created after the installation.

PRESS <ENTER> TO CONTINUE:
===============================================================================
```

6. On the Uninstall Options screen, type 1 to continue uninstalling all the ICR features and components or type 2 to choose specific features to uninstall and press Enter.

```
===============================================================================
Uninstall Options
-----------------
```

```
ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT:

  ->1- Completely remove all features and components.
    2- Choose specific features that were installed by InstallAnywhere.

Please choose one of the following options:: 2
===============================================================================
```

7. On the `Choose Product Feature` screen, type the number corresponding to the feature that you want to uninstall and press `Enter`.

   For multiple features, type the numbers separating with a comma.

```
===============================================================================
Choose Product Features
-----------------------

ENTER A COMMA_SEPARATED LIST OF NUMBERS REPRESENTING THE FEATURES YOU
WOULD LIKE TO SELECT, OR DESELECT.

TO VIEW A FEATURE'S DESCRIPTION, ENTER '?<NUMBER>'. PRESS <ENTER> WHEN YOU
ARE DONE:

    1- [ ] ICRAdmin
    2- [ ] ICRCCA
    3- [ ] ICRCore

Check the features that you want to uninstall. Unchecked features will
remain installed.:
===============================================================================
```

   Note:

   If you do not see all the ICR features and components on the `Choose Product Features` screen, you must separately uninstall the ICR components.

   For more information about uninstalling individual ICR components , see Uninstalling ICR Admin on page 127, Uninstalling ICR CCA on page 129, Uninstalling ICR Core on page 131.

8. On the `Uninstall Confirmation` screen, type `1` to confirm the unistallation or type `2` to cancel the uninstallation process and press `Enter`.

```
===============================================================================
Are you sure you want to uninstall feature(s) ICRAdmin,ICRCCA,ICRCore?
?
-------------------------------------------------

This will uninstall feature(s) ICRAdmin,ICRCCA,ICRCore. Select "OK" to
continue or "Cancel" to exit.

  ->1- OK
    2- Cancel

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
===============================================================================
```

The installer displays the `Stopping services` screen to confirm about stopping the ICR components services for the selected ICR components for uninstallation. Press `Enter` to continue uninstallation.

```
================================================================================
Stopping services for ICRAdmin,ICRCCA,ICRCore

------------------------------
Uninstaller will stop running services of respective components before
uninstalling.

PRESS <ENTER> TO CONTINUE:
================================================================================
```

Wait for the unistallation procedure to complete.

Note:

The uninstaller stops the vpms services for the ICR Admin and removes the selected components installed by the installer. The vpms services are started once the uninstallation is completed. However, the uninstaller does not remove the files and folders created after the installation. You must manually delete the component directories from the installed location after uninstalling ICR component.

9. Log out from the Linux session and open a new Linux session to reinstall ICR.
   The updated environment variables are available in a new session.

Uninstalling ICR in silent mode

About this task

Note:

If you installed ICR using the silent mode, the uninstaller silently uninstalls all the installed ICR components when you invoke the uninstaller by using the command `./Uninstall_ICR`. However, if you run the uninstaller in the console mode using the command `./Uninstall_ICR -i console`, the silent uninstallation displays the uninstallation screens.

Procedure

1. Log on to the Linux system either locally as a root user or remotely as a non-root user and change the user to root by using the **`su -`** command.
2. If you are an Avaya Services representative and if you are using Avaya Enterprise Linux or if the Avaya Service accounts are installed on this Core system:
   - Log on to the local Linux system as a sroot user.

- Or log on remotely as a non-root user and change the user to sroot by entering the **su** - sroot command.

3. Type **cd** $AVAYA_ICRADMIN_HOME/../ICR_Uninstaller and press Enter.
4. Type ./Uninstall_ICR to uninstall all the ICR components silently.
5. Log out from the Linux session and open a new Linux session to reinstall ICR.
   The updated environment variables are available in a new session.

Appendix A: ICR CCA properties configuration for EWT or queue position update and spike

ICR CCA recognizes the Estimated Wait Time (EWT) update and spike based on the increase in the EWT or queue position received from Automatic Call Distribution (ACD).

ICR CCA receives the updated EWT and queue position from ACD after every 60 seconds. ICR CCA compares the updated EWT and queue position values with the update and spike properties configured in the `icrcca.properties` file and determines whether to terminate the running Wait Treatment Application (WTA) and relaunch the same WTA or launch another WTA.

Note:

- The spike condition for EWT or queue position occurs only when the update condition for respective EWT or queue position matches. Therefore, you must keep the EWT update and queue position update values less than the EWT spike and queue position spike values.
- When both the update and spike conditions for EWT or queue position matches, ICR considers the increase in EWT or queue position as spike.

In ICR, configure the following properties for ICR CCA to determine the EWT or queue position update and spike. You can find the properties in the `icrcca.properties` file located in the *`$AVAYA_ICRCCA_HOME`*`/tomcat/conf` directory.

EWT update

ICR CCA determines the EWT update based on the difference between two successive EWT values and percentage difference between two successive EWT values.

- **ewtUpdatePercent**: If the percentage difference between two successive EWT values is greater than the value set in the `ewtUpdatePercent` property, ICR CCA stops the running WTA and relaunches the same WTA. ICR CCA uses the `ewtUpdatePercent` property in conjunction with `ewtUpdateDiff` property.

  For example: The `ewtUpdatePercent` property is set to 20. For a call in queue, the first EWT that ICR CCA receives from ACD is 100 and for the same call, the second EWT that ICR CCA receives from ACD is 150.

  As per the above example, the percentage difference between two EWT values is 50%, which is greater than the value 20 set in the `ewtUpdateDiff` property. Therefore, ICR CCA stops the running

WTA and relaunch the same WTA if the increase in EWT also meets the `ewtUpdateDiff` property configuration as mentioned below.

- **ewtUpdateDiff**: If the difference between two successive EWT values is greater than the value set in the `ewtUpdateDiff` property, ICR CCA stops the running WTA and relaunches the same WTA. ICR CCA uses the `ewtUpdateDiff` property in conjunction with `ewtUpdatePercent` property.

  For Example: The `ewtUpdatePercent` property is set to 20 and the `ewtUpdateDiff` property is set to 30. For a call in queue, the first EWT that ICR CCA receives from ACD is 100 and for the same call, the second EWT that ICR CCA receives is 150.

  As per the above example, the difference between second EWT value and first EWT value is 50, which is greater than the value set in the `ewtUpdateDiff` property and percentage difference between first and second EWT value is 50%, which is also greater than the value set in the `ewtUpdatePercent` property. Therefore ICR CCA will terminate the running WTA and relaunch the same WTA.

EWT spike

ICR CCA determines the EWT spike based on the difference between two successive EWT values and percentage difference between two successive EWT values.

- **ewtSpikePercent**: If the percentage difference between two successive EWT values is greater than the value set in the `ewtSpikePercent` property, ICR CCA stops the running WTA. After that ICR CCA launches a new WTA configured in **EWT range mapping for Skill-WTA** or relaunches the same WTA. ICR CCA uses the `ewtSpikePercent` property in conjunction with the `ewtSpikeDiff` property.

  Examples:

  - The `ewtSpikePercent` property is set to 1000. For a call in queue, the first EWT that ICR CCA receives from ACD is 120 and for the same call, the second EWT that ICR CCA receives is 300.

    As per the above example, there is 250% increase in EWT, which is less than the value set in the `ewtSpikePercent` property. Therefore, ICR CCA does not consider the increase in EWT as spike.

  - The `ewtSpikePercent` property is set to 1000. For a call in queue, the first EWT that ICR CCA receives from ACD is 120 and for the same call, the second EWT that ICR CCA receives is 1800.

    As per the above example, there is 1500% increase in EWT, which is greater than 1000. Therefore, ICR CCA considers the increase in EWT as spike and stops the running WTA if the increase in EWT also meets the `ewtSpikeDiff` property configuration as mentioned below. After that ICR CCA launches a new WTA based on the EWT range that you specify in **EWT range mapping for Skill-WTA** or relaunches the same WTA.

- **ewtSpikeDiff**: If the difference between two successive EWT values is greater than the value set in the `ewtSpikeDiff` property, ICR CCA stops the running WTA and launches a new WTA based on the EWT range that you specify in **EWT range mapping for Skill-WTA** or relaunches the same WTA. ICR CCA uses the `ewtSpikeDiff` property in conjunction with the `ewtSpikePercent` property.

Examples:

- The `ewtSpikePercent` property is set to 1000 and the `ewtSpikeDiff` property is set to 100. For a call in queue, the first EWT that ICR CCA receives from ACD is 5 and for the same call, the second EWT that ICR CCA receives is 80.

  As per the above example, there is 1600% increase in the new EWT value but the spike difference is 75, which is less than the value set in the `ewtSpikeDiff` property. Therefore, ICR CCA does not consider the increase in EWT as spike.

- The `ewtSpikePercent` property is set to 1000 and the `ewtSpikeDiff` property is set to 100. For a call in queue, the first EWT that ICR CCA receives from ACD is 30 and for the same call, the second EWT that ICR CCA receives is 400.

  As per the above example, there is 1333% increase in the new EWT value and spike difference is 370, which is greater than the value set in the `ewtSpikeDiff` property. Therefore, ICR CCA considers the increase in EWT as a spike. After that ICR CCA stops the running WTA and launches a new WTA configured in **EWT range mapping for Skill-WTA** or relaunches the same WTA.

Queue position update

Similar to EWT update, ICR CCA determines the queue position update using the following property.

- **queuePositionUpdateDiff**: If the difference between two successive queue position values is greater than the value set in the `queuePositionUpdateDiff` property, ICR CCA stops the running WTA and relaunches the same WTA.

  For Example: The `queuePositionUpdateDiff` property is set to 10. For a call in queue, the current queue position that ICR CCA receives from ACD is 50 and for the same call, the new queue position that ICR CCA receives from ACD is 80.

  As per the above example, the difference in two queue position values is 30, which is greater than the value set in the `queuePositionUpdateDiff` property. Therefore, ICR CCA stops the running WTA and relaunches the same WTA.

Queue position spike

Similar to EWT spike, ICR CCA determines the queue position spike using the following property.

- **queuePositionSpikeDiff**: If the difference between two successive queue position values is greater than the value set in the `queuePositionSpikeDiff` property, ICR CCA stops the running WTA and launches a new WTA based on the EWT range that you specify in **EWT range mapping for Skill-WTA** or relaunches the same WTA.

  For example: The `queuePositionSpikeDiff` property is set to 60. For a call in queue, the current queue position that ICR CCA receives from ACD is 50 and for the same call, the new queue position that ICR CCA receives from ACD is 180.

  As per the above example, the difference between two queue position values is 130, which is greater than the value set in the `queuePositionSpikeDiff` property. Therefore, ICR CCA stops the running WTA and launches a new WTA based on the EWT range that you specify in **EWT range mapping for Skill-WTA** or relaunches the same WTA.

Appendix B: Ports used by ICR

ICR Core service

Port Number	Protocol	Process	Used For
9009	TCP	Java	Apache tomcat AJP connection.
9005	TCP	Java	Apache tomcat shutdown.
5060/5061	TCP	Java	SIP communication with a Proxy server.
9090	TCP	Java	Communication between ICR Core and ICR Admin.

ICR Management service

Port Number	Protocol	Process	Used For
9109	TCP	Java	Apache tomcat AJP connection.
9005	TCP	Java	Apache tomcat shutdown.

Terracotta server

Port Number	Protocol	Process	Used For
9510/9520/9530	TCP	Java	Communication between Terracotta server and ICR Core.

ICR CCA service

Port Number	Protocol	Process	Used For
6009	TCP	Java	Apache tomcat AJP connection.
6005	TCP	Java	Apache tomcat shutdown.

Port Number	Protocol	Process	Used For
6080	TCP	Java	HTTP connection handler.

Appendix C: Mounting the ICR media

Before running the ICR installer, you must mount the ICR media from an ISO image format or from a CD or DVD.

The appendix provides the steps to mount the ICR media both from an ISO image and from a CD or DVD. However, you can use any one method to mount the ICR media.

Mounting the ISO image of the ICR installer

About this task

If you want to install ICR using the ISO image of an ICR installer, perform the following steps to mount the ISO image of the ICR installer.

Procedure

1. Download the ISO image of the ICR software from the Avaya support website.
2. Log in to an Experience Portal Manager system on which you want to install ICR.
   a. Log on to the Linux system either locally as a root user or remotely as a non-root user and change the user to root by using the **su -** command.
   b. If you are an Avaya Services representative and if you are using Avaya Enterprise Linux or if the Avaya Service accounts are installed on this Core system:
      - Log on to the local Linux system as a sroot user.
      - Or log on remotely as a non-root user and change the user to sroot by entering the **su - sroot** command.
3. Copy the ISO image in a local directory on the system.
4. Create a directory to mount the ISO image.
   Enter the command: **mkdir** <Mount_Point_Directory>.
5. Mount the ISO image.
   Enter the command: **mount** -o loop <Absolute_Path_Of_ISO_Image_File> <Mount_Point_Directory>.
   The system mounts the files from the ISO image of the ICR software installer to the mount point directory.
6. Change the directory to the mount point directory.

Enter the command: **cd** <Mount_Point_Directory>.

Mounting the ICR installer CD or DVD

About this task

If you create an ICR installer CD or DVD using the ISO image, perform the following steps to mount the ICR installer CD or DVD.

Note:

If you are unable to mount the installer CD or DVD using the commands given in this topic, see the server documentation for the appropriate mount command.

Procedure

1. Log in to an Experience Portal Manager system on which you want to install ICR.
   a. Log on to the Linux system either locally as a root user or remotely as a non-root user and change the user to root by using the **su -** command.
   b. If you are an Avaya Services representative and if you are using Avaya Enterprise Linux or if the Avaya Service accounts are installed on this Core system:
      - Log on to the local Linux system as a sroot user.
      - Or log on remotely as a non-root user and change the user to sroot by entering the **su - sroot** command.
2. In the CD or DVD drive of the system, insert the ICR software installation CD or DVD.

   Tip:

   The instructions given in this procedure assumes that you access the ICR installation CD or DVD by mounting the appropriate CD or DVD drive on the target system. To access the installation CD or DVD files from a shared network directory or a local directory, copy the files from the ICR installation CD or DVD to the respective directory. However, all the users on the system must be able to connect to that directory because the Avaya Aura® Experience Portal installation script changes users during execution. If the directory is only readable by the root or sroot user or the directory name contains spaces, the installation script can encounter errors and cannot complete successfully.
3. Mount the ICR software installation CD or DVD.

   The mount command depends on the system hardware and operating system.

- If you are working with Avaya Enterprise Linux, enter the command **mount** `/mnt/cdrom` to mount the CD or DVD.

  Here, */mnt/cdrom* is the mount point usually associated with the CD or DVD device in the `fstab` file.

4. If you are working with Red Hat Enterprise Linux Server 6.0, enter the following commands to mount the CD or DVD:
   - *mkdir /media/cdrom*

     Note:

     Run this command only if the `/media/cdrom` mount point is not created.

   - *mount /dev/cdrom /media/cdrom*

   Warning:

   When Red Hat Enterprise Linux Server 6.0 automatically mounts the CD or DVD, the files on the CD or DVD are not executable. You must manually mount the ICR software installation CD or DVD using the above commands.
5. Change to the mount point directory.

   Enter the command: **cd** `<Mount_Point_Directory>`.

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