AIX Version 7.3.3.1

# *IBM Electronic Service Agent*

**Note**

Before using this information and the product it supports, read the information in “Notices” on page 27.

This edition applies to AIX Version 7.3 and to all subsequent releases and modifications until otherwise indicated in new editions.

# Contents

# About this document

This book provides the information necessary to activate and manage IBM® Electronic Service Agent on AIX®.

## Highlighting

The following highlighting conventions are used in this document:

| | |
|---|---|
| **Bold** | Identifies commands, subroutines, keywords, files, structures, directories, and other items whose names are predefined by the system. Bold highlighting also identifies graphical objects, such as buttons, labels, and icons that the you select. |
| *Italics* | Identifies parameters for actual names or values that you supply. |
| `Monospace` | Identifies examples of specific data values, examples of text similar to what you might see displayed, examples of portions of program code similar to what you might write as a programmer, messages from the system, or text that you must type. |

## Case sensitivity in AIX

Everything in the AIX operating system is case sensitive, which means that it distinguishes between uppercase and lowercase letters. For example, you can use the **ls** command to list files. If you type LS, the system responds that the command `is not found`. Likewise, **FILEA**, **FiLea**, and **filea** are three distinct file names, even if they reside in the same directory. To avoid causing undesirable actions to be performed, always ensure that you use the correct case.

## ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

# IBM Electronic Service Agent

IBM Electronic Service Agent, along with the IBM Electronic Services website, make up IBM Electronic Services.

This topic collection provides information about activating, configuring, using, and troubleshooting the Electronic Service Agent on the AIX operating system.

**Related information**

IBM Electronic Service AgentThe Electronic Services Web site provides the ability to view service information reported by Electronic Service Agent, open and manage service requests, receive support messages by platform or individual, and customize the site to your preferences. To use some of the functions found on the Electronic Services Web site, such as viewing service information, you need to supply an IBM ID.

## What's new in IBM Electronic Service Agent

Read about new or changed information for the IBM Electronic Service Agent topic collection.

### How to see what's new or changed

In this PDF file, you might see revision tags (>| and |<) surrounding new and changed information.

### July 2025

The following information is a summary of the updates that are made to this release:

1. IBM Electronic Service Agent User Interface is no longer supported.
2. ESA Activation can be done through SMIT or CLI.
3. The only `esacli` supported command is:
   `/usr/esa/bin/esacli status`
4. You can send a test problem to IBM using the following command:
   `/usr/esa/esa-chcc/bin/sendnow testproblem`
   Check the logs in `/var/esa/log/problem.log`. For more information, see Sending a test problem page.
5. You can schedule periodic transactions for heartbeat, sysconfig, UAK, cleanup, and so on, by enabling corresponding monitors as 'TRUE' in `/usr/esa/esa-chcc/conf/conf.properties` and restart ESA. For more information, see Scheduling Periodic Transactions page.
6. You can set up proxy connections by enabling proxy enabled as 'TRUE' in `conf.properties/usr/esa/esa-chcc/conf/conf.properties` file and restart ESA. For more information, see Connecting to support through a proxy page.
7. All transaction logs can be found at the following path: `/var/esa/log`.

## IBM Electronic Service Agent overview

IBM Electronic Service Agent is a no-charge software tool that resides on your system to automatically and continuously monitor, collect, and periodically submit hardware problem information to IBM Support. Electronic Service Agent Electronic can also routinely collect and submit system configuration information.

IBM Support representatives use system problem descriptions and service information to better diagnose issues with your systems. With early knowledge about potential problems that IBM Electronic Service Agent provides, IBM can proactively assist you in achieving higher availability and better performance.

IBM Electronic Service Agent does the following tasks:

- Places service requests to IBM automatically if the server is under a service agreement or warranty.
- Collects and securely sends scheduled system and diagnostic inventory to an IBM database. This inventory information is available to IBM Support representatives when they are solving your problem.
- Communicates with IBM using a secure Internet connection using encryption and authentication.

## Accessing the IBM Electronic Support

The IBM Electronic Support enables you to view system configuration information reported by IBM Electronic Service Agent, search all content using advanced search capabilities, open and manage service requests, receive support content notifications by platform or individual product, and view call home problem events.

You can access the IBM Electronic Support at the following web addresses:

- http://support.ibm.com: A portfolio of tools and resources to keep your systems, software, and applications running smoothly.
- http://www-01.ibm.com/support/electronicsupport/: The support to view contracts, inventory, heartbeat, etc of your systems.

**Note:** To use some of the functions that are found on the IBM Electronic Support portal, such as viewing system configuration information or call home events, you must provide an IBM ID.

**Related information**

Accessing the Electronic Services WebsiteThe Electronic Services Web site provides the ability to view service information reported by Electronic Service Agent, open and manage service requests, receive support messages by platform or individual, and customize the site to your preferences. To use some of the functions found on the Electronic Services Web site, such as viewing service information, you need to supply an IBM ID.

## Problem processing overview

Problem processing is an important capability of Electronic Service Agent. When Electronic Service Agent detects a problem, there is a specific sequence of events that occur to record the problem, report the problem, resolve the problem, and close the problem.

The following shows the problem processing sequence of events, with references to procedures, settings, and information to help you manage those events.

1. IBM Electronic Service Agent detects and records a problem.
2. IBM Electronic Service Agent reports the problem to the IBM.
3. IBM Electronic Service Agent transmits problem-related service information to the IBM Electronic Support. Service information includes system configuration information.

   To view the system configuration information sent to the IBM Electronic Support, go to the IBM Electronic Support and select My systems. See Accessing the IBM Electronic Support.
4. The IBM Electronic Support receives the problem and service information. IBM Support contacts the person that is specified as the service contact. When contacting the service contact, IBM Support either arranges an appointment to replace the part, or, if possible, attempts to resolve the problem without a visit to the customer's site.
5. After the problem is resolved, the service request is closed by IBM Support.

**Related concepts**

Accessing the IBM Electronic Support
The IBM Electronic Support enables you to view system configuration information reported by IBM Electronic Service Agent, search all content using advanced search capabilities, open and manage service requests, receive support content notifications by platform or individual product, and view call home problem events.

**Related tasks**

Configuring operational test settings

You can configure operational test settings for Electronic Service Agent to perform the functions important to your service environment.

# Planning for Electronic Service Agent

When planning for Electronic Service Agent, consider the operating system, security, and topology of the network you plan to support.

## Operating system

Electronic Service Agent is bundled with the following supported AIX operating systems:

- All versions of AIX 7.3 and later

## Security

When using Electronic Service Agent, your information is kept private and your data is securely transmitted to IBM.

The following provides more information about the privacy of your information, the security of information you transmit to IBM Support, and the security of those using Electronic Service Agent.

### Information privacy

The service information you provide to IBM Support remains private. Only authorized IBM Support personnel and those people specifically authorized by you have access to this information.

The service information that is gathered by IBM Support is collected from the information you entered into Electronic Service Agent and the information Electronic Service Agent collected from the system. It is also gathered from phone calls with the IBM Support Center, pre-sales specialists, administrative clerks, and other groups within IBM. These IBM groups have electronic access to the information so that they can prepare for and perform advanced problem determination to more efficiently serve you.

The service information collected by Electronic Service Agent includes the following:

- Your support contact information, including names, phone numbers, and e-mail addresses.
- Location information about the system on which IBM Electronic Service Agent is installed, including city, geographic region, country, building, and the number for the telephone that is located nearest the system.
- System failure logs, part numbers, feature codes for parts, part serial numbers, part locations, software listing, operating system applications, program temporary fixes (PTFs), the maintenance level, firmware levels, configuration values, system utilization, and performance.

Authorized IBM employees can view all service information about the system. Service information does not include the following:

- Collection or transmission of any of your company's financial, statistical, or personnel information
- Client information
- Your business plans

In addition, Electronic Service Agent might provide a call-home mechanism for other IBM offerings. The call-home mechanism sends information specific to a particular IBM offering. The information collected by such offerings is covered in a separate agreement for each IBM offering.

### Information transmission security

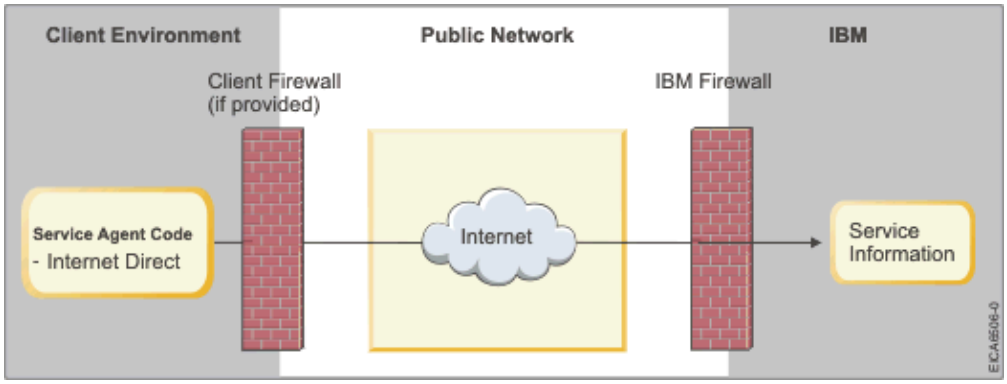
The problem information and service information you send to IBM Support is safe and secure.

Electronic Service Agent can collect problem and service information and send it to IBM Support on a scheduled basis. Electronic Service Agent transactions are outbound requests that are sent using the security of Hypertext Transfer Protocol Secure (HTTPS). These connection requests are always initiated

from the customer system by Electronic Service Agent. Electronic Service Agent can accept incoming connections from the activator command used to activate the product, from the **esacli** command. Both the activator and **esacli** commands are run only locally on the client system. In all these cases, only users with superuser privileges can run the commands that establish the connections, and the connections are secured, encrypted, and completely within the client local area network.

Electronic Service Agent initiates a connection with IBM Support and then IBM Support replies. IBM Support never initiates a connection to Electronic Service Agent. During the activation and setup of Electronic Service Agent, you select how Electronic Service Agent communications are set up. By default, communication configuration is a direct Internet connection. You can select to keep the default, or specify to transmit information using the Electronic Service Agent proxy server or another proxy server. Electronic Service Agent uses the client's connectivity environment, including any firewalls that the client has established.

The following figure shows a summary of the connection into IBM. The nature of maintaining a high-level security posture dictates that IBM does not divulge in-depth details regarding the management of security or its tools, processes, and audits.




Information transmission security is important whether your connection to IBM is through a direct or proxy connection.

## Internet transmission of service information

**Note:** The Internet provider relationship and connection are the responsibility of the client.

If you select the Internet path to send your information, then the following process applies:

1. At the scheduled time, Electronic Service Agent collects the information to be transmitted and queues it for transmission.
2. The collected information is sent to IBM.
3. After the arrival to IBM, the information is transferred to the appropriate IBM database.

## Proxy transmission of service information

The proxy can be either a client supplied HTTP proxy or the IBM Service and Support Proxy. The proxy resides on a client system.

**Note:** The client supplied HTTP proxy is the responsibility of the client.

If you select the proxy path to send your information, then the following process applies:

1. At the scheduled time, Electronic Service Agent collects the information to be transmitted and queues it for transmission.
2. Using the TLS connection between the system and IBM Support, Electronic Service Agent establishes an TLS internet connection between the proxy and IBM Support. This connection is authenticated using the system ID and password previously created.
3. Electronic Service Agent sends the collected information through the proxy to IBM Support.

4. After the information has arrived to IBM Support, the information is transferred to the appropriate IBM database.

## IP Addresses

### *IP Address and Port used by AIX ESA*

If your AIX ESA supports the simplified connectivity path, view the section. This appendix identifies the IP address and port that are used by AIX ESA when it is configured to use internet connectivity.

From ESA version 6 / 7 for AIX, a new Call Home server environment is deployed that provides a front-end proxy to the current Call Home infrastructure. This environment simplifies the IT for Call Home customers by reducing the number of customers facing IBM servers, enabling IPv6 connectivity, and providing enhanced security by supporting NIST 800-131A. Customers have fewer IBM addresses to open on their firewall. All Call Home internet traffic flows through the Call Home proxy and then fan out to various internal IBM service providers.

This list applies to all pre-defined ports and addresses that are used by ESA, but not to those ESA functions, which allows the entry of a target address / port.

*Table 1.*

| Host name | IP Address | Port | Protocol | Additional Detail |
|---|---|---|---|---|
| esupport.ibm.com | 192.148.6.11 | 443 | HTTPS (to IBM), HTTP (from IBM) | • esupport.ibm.com IPv4 address 129.42.56.189 is disabled. Corresponding IPv6 is disabled as well.<br>• esupport.ibm.com IPv4 address 129.42.60.189 is disabled. Corresponding IPv6 is disabled as well. |

**Note:** A new IP address (192.148.6.11) is enabled and returned from DNS. The old IP addresses 129.42.18.70, 129.42.19.70 and (129.42.21.70) are disabled and no longer returned from DNS. For more information, see https://www.ibm.com/support/pages/node/6853429.

## User security

User and file security is provided by AIX user authorizations and privileges.

For detailed information about AIX user and file security, see "Users, groups, and passwords" in the System p and AIX Information Center.

**Related information**

Users, groups, and passwordsSee Users, groups, and passwords in the IBM System p and AIX Information Center.

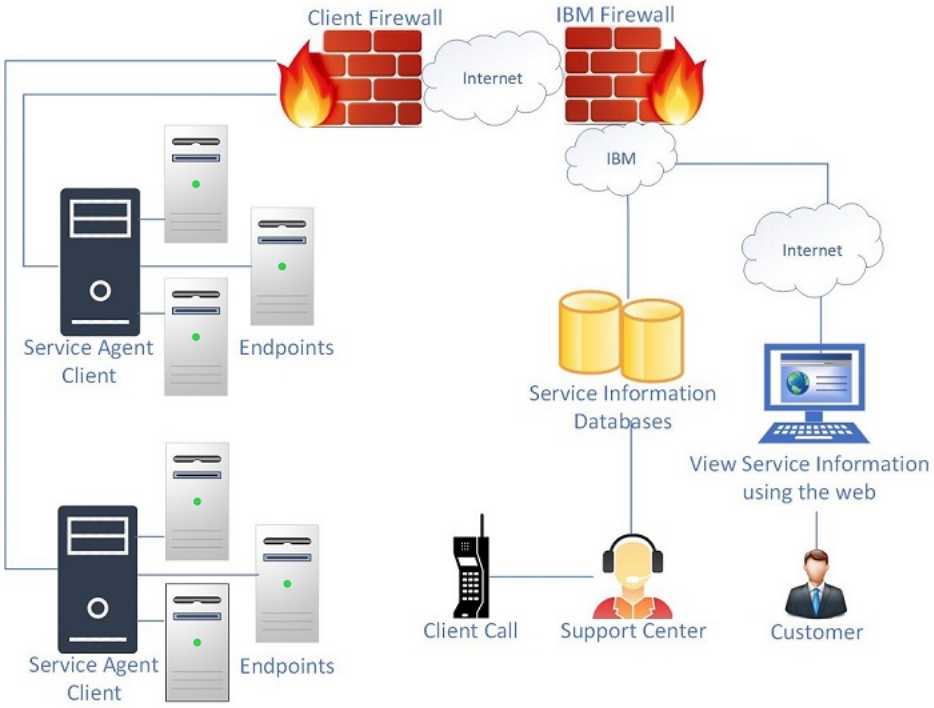
# Topology

Ensure that you consider your topology when planning for Electronic Service Agent.

Your topology might consist of stand-alone Electronic Service Agent clients independently connecting to IBM Support, Electronic Service Agent clients connecting to IBM Support through a common exit point, or HMC managed systems.

## Stand-alone client topology

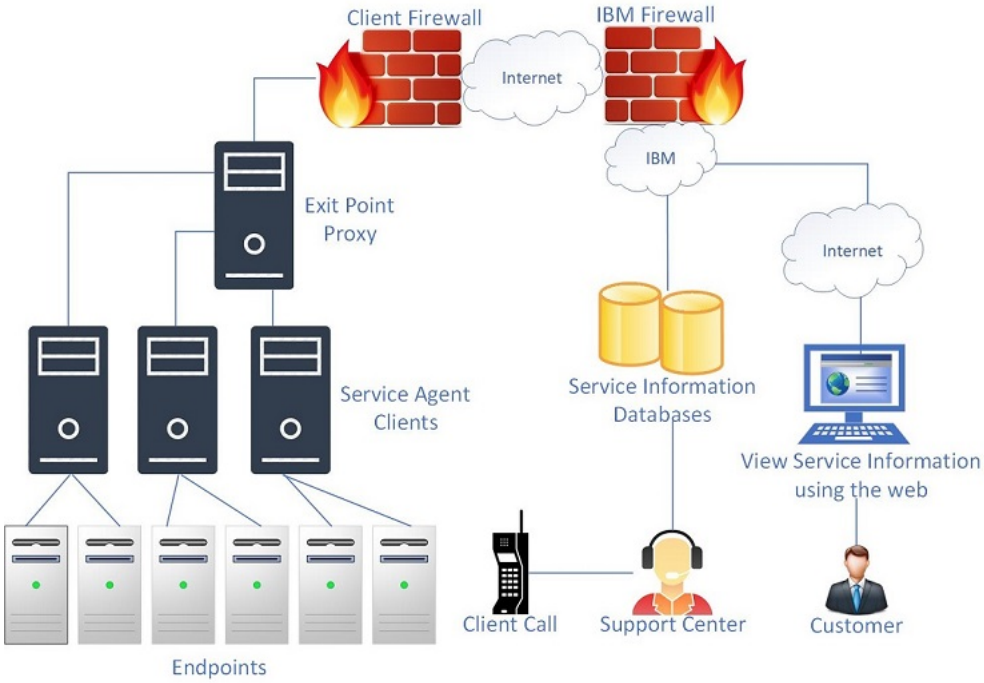
1. The Service Agent client gathers the information from end points through SSH and transmits to the IBM Electronic Support.
2. The information is transmitted to IBM Electronic Support in one of the following ways:
   - Through an Internet connection to IBM Electronic Support. Information is protected using existing client firewalls and the IBM firewall.
   - Through a proxy. The proxy can be either a client supplied HTTP proxy or the IBM Service and Support Proxy. Information is protected using existing client firewalls and the IBM firewall.
3. The information is stored in problem management databases and service information databases and made available to the IBM Support Center and service representative to help them assist you in diagnosing problems




## Common exit point topology

The common exit point topology consists of Electronic Service Agent clients connecting through a proxy to the service and support facilities of IBM. The proxy can be either a client supplied HTTP proxy or the IBM Service and Support Proxy. Information is protected using existing client firewalls and the IBM firewall.

1. Each Electronic Service Agent client gathers the information from the hosts (AIX, Linux) for that particular client.
2. Each client transmits the information to IBM Electronic Support through the exit point proxy.
3. The Electronic Service Agent exit point transmits the information to IBM Electronic Support though the proxy.
4. The information is stored in problem management databases and service information databases and made available to the IBM Support Center and service representative to help them assist you in diagnosing problems.




**Related tasks**

Configuring your service connection
Electronic Service Agent can connect to IBM Support through direct Internet (direct HTTPS connection), service and support proxy, or HTTP proxy connection paths. IBM Electronic Service Agent uses IPv6 and IPv4 to connect to the IBM Electronic Support.

## Using Electronic Service Agent on a system with an HMC

If the system running Electronic Service Agent has an attached Hardware Management Console (HMC), there are things to consider when using Electronic Service Agent.

The HMC includes its own version of Electronic Service Agent. Electronic Service Agent on the HMC monitors the system and AIX and Linux® partitions for errors, and reports those errors to IBM. It also collects and reports hardware service information and performance management information to IBM Support. Electronic Service Agent on a partition does not collect hardware information. It collects other service information such as software information.

To access the Electronic Service Agent user guide for HMC, go to the Electronic Services Web site.

**Related information**

Using Electronic Service Agent on a system with an HMCThe Electronic Services Web site provides the ability to view service information reported by Electronic Service Agent, open and manage service requests, receive support messages by platform or individual, and customize the site to your preferences. To use some of the functions found on the Electronic Services Web site, such as viewing service information, you need to supply an IBM ID.

## Using Electronic Service Agent in an environment with other operating systems

If the system running Electronic Service Agent is in an environment with other operating systems, there are things to consider when using Electronic Service Agent.

Electronic Service Agent is operating system specific. Each operating system needs its own compatible version of Electronic Service Agent.

To access the Electronic Service Agent user guides for different operating systems, go to the Electronic Services website.

**Related information**

Using Electronic Service Agent in an environment with other operating systemsThe Electronic Services Web site provides the ability to view service information reported by Electronic Service Agent, open and manage service requests, receive support messages by platform or individual, and customize the site to your preferences. To use some of the functions found on the Electronic Services Web site, such as viewing service information, you need to supply an IBM ID.

# Installing Electronic Service Agent

To install Electronic Service Agent you install the code on your system and prepare to activate Electronic Service Agent.

AIX has the Electronic Service Agent code in the base operating system, as part of the AIX installation media. Electronic Service Agent detects any previous releases of Electronic Service Agent installed on the system. You are required to uninstall previous releases of Electronic Service Agent before you can activate the new one. Perform the following steps to install Electronic Service Agent on an AIX 5.3 TL6 or later system.

1. To determine if Electronic Service Agent is already installed on this system, enter the following on an AIX command line: `lslpp -lcq | grep -i esagent`
2. Check whether information is returned from running the command.
   - If no information is returned, then Electronic Service Agent is not installed.
   - If any information is returned, then Electronic Service Agent is installed.
3. Go to the directory that contains the Electronic Service Agent installation file.
4. Use your normal installation process to install Electronic Service Agent. The Electronic Service Agent file set is `bos.esagent`.
5. Go to Activating Electronic Service Agent to enable it to report problems and transmit service information to IBM Support.

**Related concepts**

Activating Electronic Service Agent
You must activate Electronic Service Agent to enable problem detection, reporting, and transmission of service information to IBM Support.

# Activating Electronic Service Agent

You must activate Electronic Service Agent to enable problem detection, reporting, and transmission of service information to IBM Support.

To activate Electronic Service Agent, you must perform the following tasks:

1. Configuring the service connection to IBM.
2. Testing the service connection to IBM.
3. Specifying contact and location information so that IBM Support knows the location of the system running Electronic Service Agent and whom to contact about a problem sent to IBM Support by Electronic Service Agent.

After activating Electronic Service Agent, problem monitoring and service information collection functions become active and reporting to IBM Support begins.

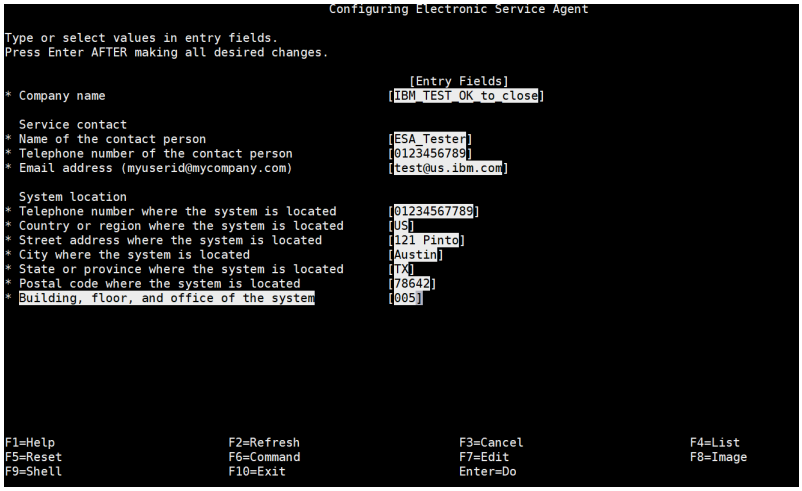
ESA activation can be done through SMIT or CLI.

## Activation of IBM Electronic Service Agent through SMIT Interface

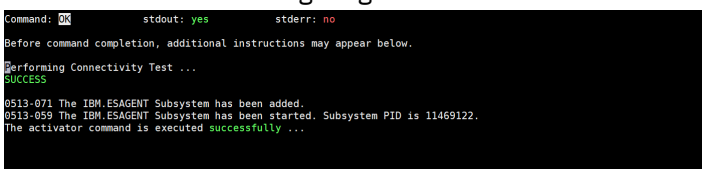
Follow the below steps to activate IBM Electronic Service Agent through SMIT:

1. Log on to the system as `root` for AIX.
2. Enter **`smit`** at the AIX command prompt for AIX.

3. Select **Electronic Service Agent**.
4. Select the following:
   - **Configure Electronic Service Agent**
5. Enter the required details in the following prompt:




6. IBM Electronic Service Agent gets activated. The screen shows the following status:




## Activation of IBM Electronic Service Agent through CLI

Follow the steps given below to activate IBM Electronic Service Agent through CLI:

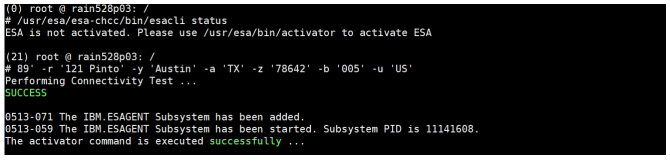
1. Execute the following command on CLI:

   ```
   /usr/esa/bin/activator -c -m 'Company name' -n 'Name of the contact
   person' -t 'Telephone number of the contact person' -e 'Email address
   (myuserid@mycompany.com)' -s 'Telephone number where the system is located'
   -r 'Street address where the system is located' -y 'City where the system is
   located' -a 'State or province where the system is located' -z 'Postal code
   where the system is located' -b 'Building, floor, and office of the system'
   -u 'Country or region where the system is located'
   ```

   Example:

   ```
   /usr/esa/bin/activator -c -m 'TEST' -n 'ESA Tester' -t '0123456789' -e
   'test1@ibm.com' -s '01234567789' -r '121 Pinto' -y 'Austin' -a 'TX' -z
   '78642' -b '005' -u 'US'
   ```

2. The following output is obtained at ESA activation:



# Configuring your service connection

Electronic Service Agent can connect to IBM Support through direct Internet (direct HTTPS connection), service and support proxy, or HTTP proxy connection paths. IBM Electronic Service Agent uses IPv6 and IPv4 to connect to the IBM Electronic Support.

**Related tasks**

Connecting to support through a direct Internet connection
Connecting Electronic Service Agent to IBM Support through a direct HTTPS Internet connection is fast and efficient. This is the default configuration.

Connecting to support through a proxy
Connecting Electronic Service Agent through HTTP proxy can be fast and easy from your business network, and minimizes the number of systems that are directly connected to the Internet.

## Connecting to support through a direct Internet connection

Connecting Electronic Service Agent to IBM Support through a direct HTTPS Internet connection is fast and efficient. This is the default configuration.

Each Electronic Service Agent client must have a separate Internet connection. You might not need to update or create new connections, unless changes have already been made to your configuration.

To specify or change a direct Internet connection type, complete the following steps:

1. Press `Enter` to create or change the service configuration.
2. Enter **yes** in the Test service configuration field to automatically test the connection when Enter is pressed.

Go to Specifying contact and location information to specify the location of your system and the name of the person to contact about the system.

**Related tasks**

Configuring your service connection
Electronic Service Agent can connect to IBM Support through direct Internet (direct HTTPS connection), service and support proxy, or HTTP proxy connection paths. IBM Electronic Service Agent uses IPv6 and IPv4 to connect to the IBM Electronic Support.

Testing connectivity to IBM
You can test your connection to IBM.

## Connecting to support through a proxy

Connecting Electronic Service Agent through HTTP proxy can be fast and easy from your business network, and minimizes the number of systems that are directly connected to the Internet.

If you decide to use the IBM Service and Support proxy, create the proxy on an exit point system. See Common exit point topology in the Topology topic for information about using an exit point for Electronic Service Agent. Then go to Creating the IBM Service and Support proxy before specifying the proxy connection type.

To specify a proxy connection type, complete the following steps:

1. Set the property PROXY_ENABLED=True to enable proxy in `conf.properties` file in`/usr/esa/esa-chcc/conf` directory.
2. Provide the proxy details as given below.

```
[PROXY]
PROXY_URL=        #Proxy url/hostname must be a positive Value Eg-9.9.9.9
PROXY_PORT=        # Proxy Port should be a Positive Integer   Eg - 5030        # Proxy
Enabled should be in Boolean (True/False)
PROXY_USER=
PROXY_PASSWORD=
```

3. Restart the ESA application using the steps given in Restarting the ESA application page.

Go to Specifying contact and location information to specify the location of your system and the name of the person to contact about the system.

**Related concepts**

Topology
Ensure that you consider your topology when planning for Electronic Service Agent.

**Related tasks**

Configuring your service connection
Electronic Service Agent can connect to IBM Support through direct Internet (direct HTTPS connection), service and support proxy, or HTTP proxy connection paths. IBM Electronic Service Agent uses IPv6 and IPv4 to connect to the IBM Electronic Support.

Testing connectivity to IBM
You can test your connection to IBM.

## Testing connectivity to IBM

You can test your connection to IBM.

IBM Electronic Service Agent communicates with several IBM servers, and all connections with IBM are backed up by redundant sites. So if a primary connect point is unavailable, a connection is attempted to a backup server.

To test connectivity, execute the following command on CLI:

```
/usr/esa/bin/verifyConnectivity -t
```

Else, navigate to the `/usr/esa/bin` folder and execute the command:

```
./verifyConnectivity -t
```


You can use the **SMIT** (for AIX) interface to test connectivity to IBM. Select **Help** from the panels if you have questions about the specific panel or the information to enter.

To test connectivity to IBM, complete the following steps:

1. Log on to the system as `root` for AIX.
2. Enter **`smit`** at the AIX command prompt for AIX.
3. Select **Electronic Service Agent**.
4. Select **Verify Electronic Service Agent Connectivity** and press Enter.

The system returns a report similar to the following:

```
Connectivity Verification Test Results: succeeded
```

If any connectivity failures are reported by the connectivity test, examine the settings of firewalls and proxy servers to ensure that a connection between IBM Electronic Service Agent and the failing connection is allowed.

# Using IBM Electronic Service Agent

You can specify how Electronic Service Agent monitors and collects problem information, and sends service information to IBM.

You can manage and control Electronic Service Agent and its functions by using one of the following methods:

- The System Management Interface Tool (SMIT) for AIX

- The Electronic Service Agent command line interface (esacli)

## SMIT (for AIX) interface

System Management Interface Tool (SMIT) is the AIX interface used to manage and control some aspects of Electronic Service Agent.

To access and use the interface, complete the following steps:

1. Log on to the system as `root` for AIX.
2. Enter **`smit`** at the AIX command prompt for AIX.
3. Select **Electronic Service Agent**.
4. Select one of the following:
   - **Configure Electronic Service Agent**

     The contact information for the person that IBM Support might contact about a problem reported by Electronic Service Agent, location information for the system, and the IBMID to enable access to the system information about the IBM Service website.
   - **Configure Service & Support Connectivity**

     Configure Electronic Service Agent to connect to IBM Support through direct Internet (direct HTTPS connection), service and support proxy, or HTTP proxy connection paths.
   - **Start Electronic Service Agent**

     Problem monitoring and collecting is stopped when Electronic Service Agent is stopped. If Electronic Service Agent is stopped, it remains stopped until the system is rebooted.
   - **Stop Electronic Service Agent**

     Problem monitoring and collecting is stopped when Electronic Service Agent is stopped. If Electronic Service Agent is stopped, it remains stopped until the system is rebooted.

## Sending a test problem

Send a test problem to IBM Support to see if the problem reporting function is working correctly.

To send a test problem to IBM, complete the following steps:

1. To send a test problem to IBM, we can use the following command:
   `/usr/esa/esa-chcc/bin/sendnow testproblem`
   The output appears as follows:
   ```
   # /usr/esa/esa-chcc/bin/sendnow testproblem
   Test Problem Transaction sent successfully. Please check logs at /var/esa/log/problem.log
   ```
2. Check the logs in `/var/esa/log/problem.log`.
3. Reference:
   `/usr/esa/esa-chcc/bin/sendnow testproblem`

   `Test Problem Transaction sent successfully.`
4. If an open problem with service request number already exists, re-triggering the command again will report a duplicate problem with **DUP00000000** Ticket Number.

**Related concepts**

User security

User and file security is provided by AIX user authorizations and privileges.

## Running an operational test

Check to see if your connection and the transmission of service information to IBM Support is working correctly.

To check your connection and the transmission of service information to IBM Support, complete the following steps:

- The heartbeat command allows you to test the connection to IBM support:
  `/usr/esa/esa-chcc/bin/sendnow heartbeat`
- If the operational test is passed, the output on CLI appears as follows:
  `Heartbeat Transaction sent successfully. Please check Logs at /var/esa/log/heartbeat.log`
- If the operational test is failed, the output on CLI appears as follows:
  `Heartbeat Transaction Failed. Please check Logs at /var/esa/log/heartbeat.log`

For more information, see "Configuring operational test settings" on page 15 page.

**Related concepts**

User security

User and file security is provided by AIX user authorizations and privileges.

## Collecting system configuration information

Electronic Service Agent collects and sends system configuration information to IBM. System configuration information consists of information about the system being monitored by Electronic Service Agent.

Manually collecting and sending system configuration information to IBM Support is done using the command line.

**Related concepts**

User security

User and file security is provided by AIX user authorizations and privileges.

## Collecting extended error data

Extended error data is collected for every serviceable event that is sent to IBM (call home events) from the end points. Whenever a hardware problem is identified, ESA collects all system logs, configuration, and diagnostic information that can be used for debugging.

The extended error data is appended to the service requests (PMR) for diagnosing the problems.

## Checking status

You can check whether IBM Electronic Service Agent is monitoring your system.

You can use the following command:
**`esacli status`**
to display the status of the IBMElectronic Service Agent instance. For information, see "Electronic Service Agent commands" on page 21.

## Accessing the IBM Electronic Support

The IBM Electronic Support enables you to view system configuration information reported by IBM Electronic Service Agent, search all content using advanced search capabilities, open and manage service requests, receive support content notifications by platform or individual product, and view call home problem events.

You can access the IBM Electronic Support at the following web addresses:

- http://support.ibm.com: A portfolio of tools and resources to keep your systems, software, and applications running smoothly.
- http://www-01.ibm.com/support/electronicsupport/: The support to view contracts, inventory, heartbeat, etc of your systems.

**Note:** To use some of the functions that are found on the IBM Electronic Support portal, such as viewing system configuration information or call home events, you must provide an IBM ID.

**Related information**

Accessing the Electronic Services WebsiteThe Electronic Services Web site provides the ability to view service information reported by Electronic Service Agent, open and manage service requests, receive support messages by platform or individual, and customize the site to your preferences. To use some of the functions found on the Electronic Services Web site, such as viewing service information, you need to supply an IBM ID.

# Managing IBM Electronic Service Agent

You can configure and manage IBM Electronic Service Agent. This includes modifying the configuration and specifying how IBM Electronic Service Agent monitors and collects problem information, and sends system configuration information to IBM.

## Configuring the service and support proxy

Using IBM Electronic Service Agent, we can establish a network connection through a proxy server.

1. Set the property PROXY_ENABLED=True to enable proxy in `conf.properties` file in`/usr/esa/esa-chcc/conf` directory.
2. Provide the proxy details as given below.

```
[PROXY]
PROXY_URL=        #Proxy url/hostname must be a positive Value Eg-9.9.9.9
PROXY_PORT=        # Proxy Port should be a Positive Integer   Eg - 5030        # Proxy
Enabled should be in Boolean (True/False)
PROXY_USER=
PROXY_PASSWORD=
```

3. Restart the ESA application using the steps given in Restarting the ESA application page.

**Related tasks**

Connecting to support through a proxy
Connecting Electronic Service Agent through HTTP proxy can be fast and easy from your business network, and minimizes the number of systems that are directly connected to the Internet.

Testing connectivity to IBM
You can test your connection to IBM.

## Configuring system configuration information collection

IBM Electronic Service Agent (ESA) can collect system configuration information, the collection schedule can be customized by setting the time and frequency parameters in the `/usr/esa/esa-chcc/conf/conf.properties` file.

1. To perform system configuration information collection manually, we can test using below command in CLI:
   `/usr/esa/esa-chcc/bin/sendnow sysconfig`
   The output appears as follows:

```
# /usr/esa/esa-chcc/bin/sendnow sysconfig
System Configuration Transaction sent successfully. Please check logs at /var/esa/log/sysconfig.log
```

2. We can schedule periodic transactions by setting 'ENABLE_SYSCONFIG_MONITOR=True' in `/usr/esa/esa-chcc/conf/conf.properties` file.

3. Below is the example at particular interval and particular frequency, at which these periodic transactions happen (24hr time intervals).

```
sysconfig_type = Scheduled
sysconfig_frequency = 1w
sysconfig_time = 01:30
sysconfig_day = Sunday
```

4. Restart the ESA application using the steps given in Restarting the ESA application page.
5. System Configuration and Snap File Upload logs can be found in the log file: `/var/esa/log/sysconfig.log`.

## Configuring operational test settings

You can configure operational test settings for Electronic Service Agent to perform the functions important to your service environment.

1. To perform operational test manually, we can test using below command in CLI: `/usr/esa/esa-chcc/bin/sendnow heartbeat`
   The output appears as follows:

```
# /usr/esa/esa-chcc/bin/sendnow heartbeat
Heartbeat Transaction sent successfully. Please check Logs at /var/esa/log/heartbeat.log
```

2. We can schedule periodic transactions for heartbeat by setting 'ENABLE_HEARTBEAT_MONITOR=True' in `/usr/esa/esa-chcc/conf/conf.properties` file.
3. Below is the example at particular interval and particular frequency, at which these periodic transactions happen (24hr time intervals).

```
heartbeat_type = Scheduled
heartbeat_frequency = 1d
#time (24 hour clock)
heartbeat_time = 19:07
```

4. Restart the ESA application using the steps given in Restarting the ESA application page.
5. Heartbeat/Operational Test logs can be found in the log file: `/var/esa/log/heartbeat.log`.

**Related concepts**

User security
User and file security is provided by AIX user authorizations and privileges.

## Setting the trace level

Trace level determines the message severity recorded during Electronic Service Agent activity.

To set the trace level, complete the following steps:

1. Set the appropriate trace level in the `/usr/esa/esa-chcc/conf/log4p.conf` file.
2. Select the trace level for the message severity you want recorded during Electronic Service Agent activity. The least detailed amount of data is logged with the setting **CRITICAL**, and the most detailed amount of data is logged with the setting **DEBUG**.
   By default, you can view all **INFO** logs.
3. Follow below steps to switch to **DEBUG** mode:
   a) Open `/usr/esa/esa-chcc/conf/log4p.conf` file in vi mode (`vi /usr/esa/esa-chcc/conf/log4p.conf`).
   b) Press Esc and execute `:g/INFO/s//DEBUG/g` and press enter.
   c) Save it using :wq!.

**Related concepts**

User security

User and file security is provided by AIX user authorizations and privileges.

## Configuring UAK Management settings

You can configure UAK Management settings for IBM ESA to verify and update the access keys for POWER8 (and later) systems.

POWER8 (and later) servers include an “update access key” (UAK) that is checked when system firmware updates are applied to the system.
POWER10 (and later) servers include an “update access key” (UAK) that is checked when system firmware and OS updates are applied to the system.
The access keys include an expiration date. IBM Electronic Service Agent updates these keys either manually or automatically.

- While checking manually, the IBM ESA checks the expiration date, downloads, and uploads the latest access keys.
- For automatic updates, the IBM ESA checks the expiration date of the access keys periodically, and updates with the latest access keys, only if the expiration date is less than 30 days.

1. To perform UAK transaction manually, we can test using below command in CLI: `/usr/esa/esa-chcc/bin/sendnow uak`
2. We can schedule periodic transactions by enabling 'ENABLE_UAK_MONITOR=True' in `/usr/esa/esa-chcc/conf/conf.properties` file.
3. Below is the example at particular interval and particular frequency at which these periodic transactions happen (24hr time intervals).

   **For UAK:**

   ```
   uak_type = Scheduled
   uak_frequency = 1w
   #time (24 hour clock)
   uak_time = 11:05
   uak_day = Wednesday
   ```

   `UAK Transaction sent successfully. Please check logs at /var/esa/log/uak.log`
4. Restart the ESA application using the steps given in Restarting the ESA application page.
5. UAK check logs can be found in the log file: `/var/esa/log/uak.log`

## Configuring system cleanup settings

You can configure system cleanup settings by using IBM ESA to schedule the cleanup of data.

1. We can schedule periodic transaction for system cleanup at a particular interval and frequency by updating below fields in `conf.properties` file at `/usr/esa/esa-chcc/conf` path.
2. Below is the example of particular interval and particular frequency at which these periodic transactions happen (24hr time intervals).

   **For cleanup:**

   ```
   cleanup_type = Scheduled
   cleanup_frequency = 1d
   cleanup_time = 12:52
   ```
3. Restart the ESA application using the steps given in Restarting the ESA application page.
4. The systems cleanup logs can be found in the log file: `/var/esa/log/trace.log`

# Stopping and starting Electronic Service Agent

Electronic Service Agent is automatically started when the activation process is complete. However, there might be times when you need to stop or start Electronic Service Agent.

Stopping and starting Electronic Service Agent can be done using SMIT (System Management Interface Tool) or the command-line interface.

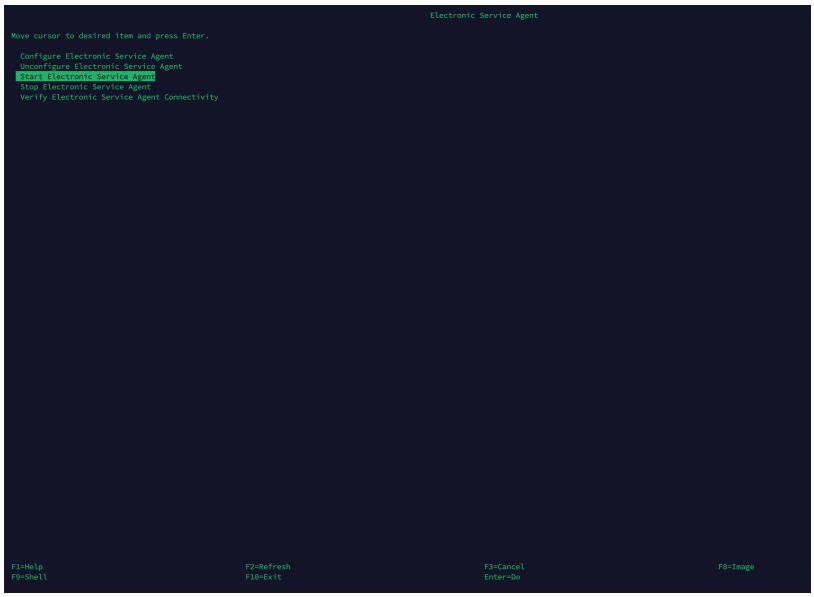
Select **Help** from the SMIT panels if you have questions about the specific panel or the information to enter.

### Stop or Start Electronic Service Agent through SMIT

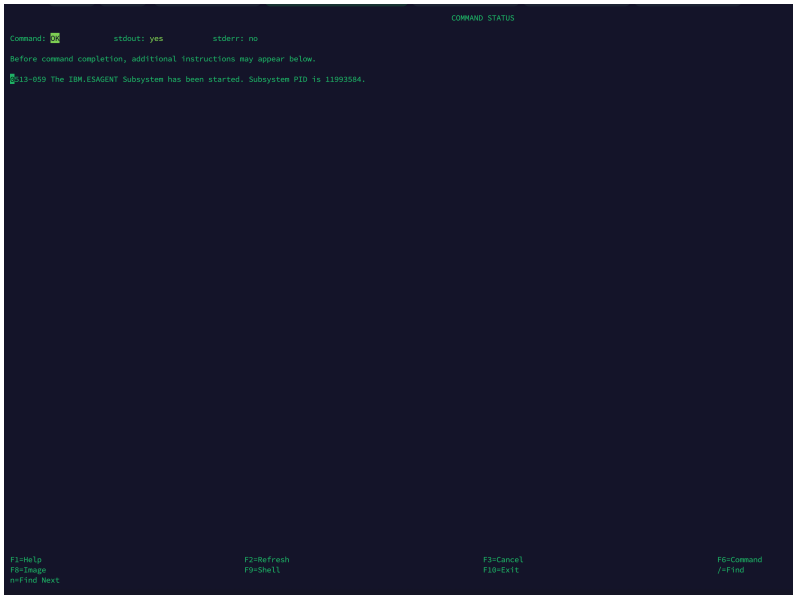
To stop or start Electronic Service Agent through SMIT, complete the following steps:

1. Log on to the system as root.
2. Enter **`smit`** for AIX.
3. Choose the **Electronic Service Agent** from the available options.

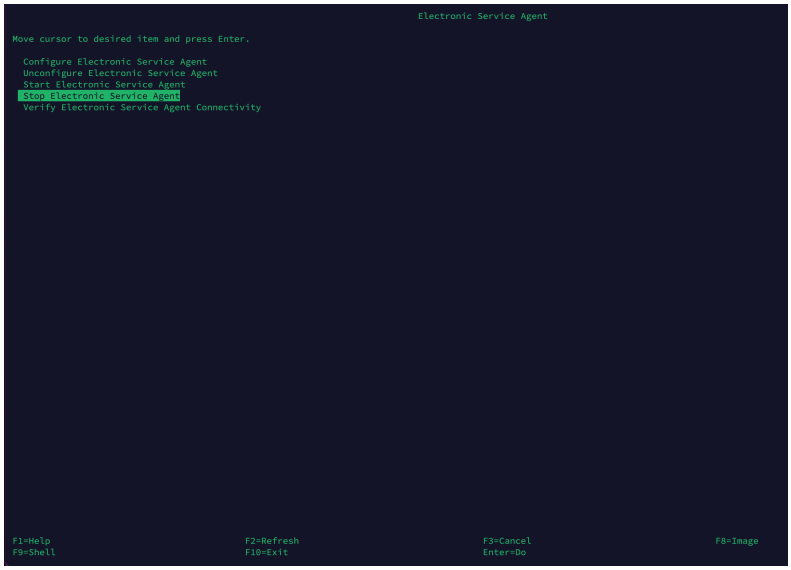

4. The Electronic Service Agent Configuration actions screen is displayed.
   a. Select **Start Electronic Service Agent** from the menu.



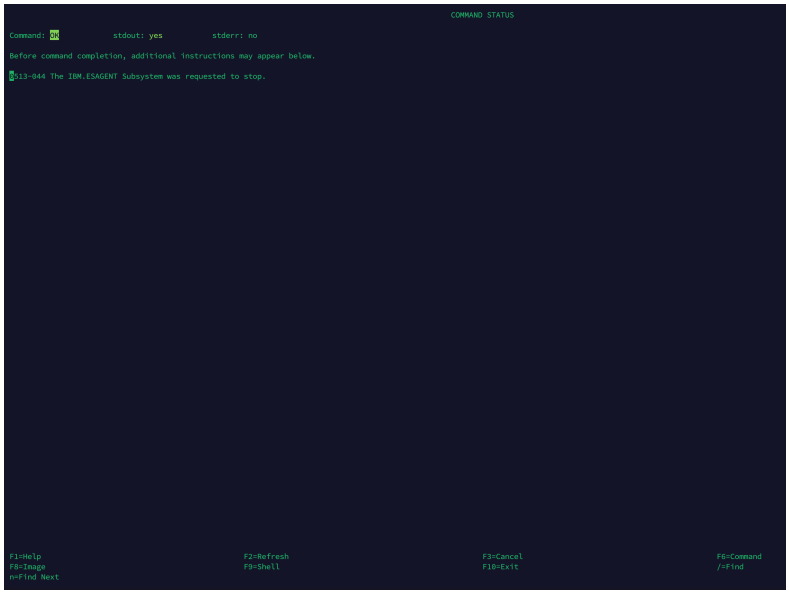

The Electronic Service Agent is started as follows.




b. If **Stop Electronic Service Agent** is selected from the previous menu:




The Electronic Service Agent application is stopped as follows.



**Stop or Start Electronic Service Agent through CLI**

To start or stop Electronic Service Agent through the command-line interface, complete the following steps:

1. Launch the command prompt on your system running the Electronic Service Agent application.
2. You can use the following command on CLI for starting the Electronic Service Agent:
   `startsrc -s IBM.ESAGENT`
3. You can use the following command on CLI for stopping the Electronic Service Agent:
   `stopsrc -s IBM.ESAGENT`

# Testing connectivity to IBM

You can test your connection to IBM.

IBM Electronic Service Agent communicates with several IBM servers, and all connections with IBM are backed up by redundant sites. So if a primary connect point is unavailable, a connection is attempted to a backup server.

To test connectivity, execute the following command on CLI:

```
/usr/esa/bin/verifyConnectivity -t
```

Else, navigate to the `/usr/esa/bin` folder and execute the command:

```
./verifyConnectivity -t
```


You can use the **SMIT** (for AIX) interface to test connectivity to IBM. Select **Help** from the panels if you have questions about the specific panel or the information to enter.

To test connectivity to IBM, complete the following steps:

1. Log on to the system as `root` for AIX.
2. Enter **`smit`** at the AIX command prompt for AIX.
3. Select **Electronic Service Agent**.
4. Select **Verify Electronic Service Agent Connectivity** and press Enter.

The system returns a report similar to the following:

```
Connectivity Verification Test Results: succeeded
```

If any connectivity failures are reported by the connectivity test, examine the settings of firewalls and proxy servers to ensure that a connection between IBM Electronic Service Agent and the failing connection is allowed.

# Checking system heartbeat

Operational tests of Electronic Service Agent help you check the heartbeat of your system. You can schedule a system heartbeat test to run automatically by using CLI commands. You can also manually check the system heartbeat, when required.

## Testing the system heartbeat manually

1. To test the heartbeat manually, we can test using the below command in CLI:
   `/usr/esa/esa-chcc/bin/sendnow heartbeat`

2. We can schedule periodic transactions by setting 'ENABLE_HEARTBEAT_MONITOR=True' in `/usr/esa/esa-chcc/conf/conf.properties` file.
3. Below is the example at particular interval and particular frequency, at which these periodic transactions happen (24hr time intervals).

   **For Heartbeat**

```
heartbeat_type = Scheduled
heartbeat_frequency = 1d
#time (24 hour clock)
heartbeat_time = 19:07
```

4. Restart the ESA application using the steps given in Restarting the ESA application page.
5. Heartbeat/Operational Test logs can be found in the log file: `/var/esa/log/heartbeat.log`.

## Scheduling Periodic Transactions

You can schedule periodic transactions for heartbeat, sysconfig, UAK, and so on, by enabling corresponding monitors as 'TRUE' in `/usr/esa/esa-chcc/conf/conf.properties` and restart ESA.

Below are the examples at particular interval and particular frequency, at which these periodic transactions happen (24hr time intervals):

1. **For Heartbeat**: for more information, see Checking system heartbeat.
2. **For UAK**: for more information, see Configuring UAK Management settings.
3. **For Cleanup**: for more information, see Configuring system cleanup settings.
4. **For System configuration**: for more information, see Configuring service information collection.
5. **For Enabling/ Disabling Health Monitors:**

```
[MONITORS]
ENABLE_HEARTBEAT_MONITOR=True
ENABLE_UAK_MONITOR=True
ENABLE_PROBLEM_MONITOR=True
ENABLE_SYSCONFIG_MONITOR=True
ENABLE_INVENTORY_MONITOR=True
```

You can view the different logs for different operations at the indicated file-locations.

1. All the transaction logs can be found at the following path: `/var/esa/log`.
2. Heartbeat/Operational Test logs can be found in the log file: `heartbeat.log`.
3. UAK Key, Firmware Expiry, and OS Access Key Expiration logs can be found in the log file: `uak.log`.
4. System Configuration and Snap File Upload logs can be found in the log file: `sysconfig.log`.
5. Problem Details and EED Transmission Info logs can be found in the log file: `problem.log`.
6. Proxy Settings (True/False) and all Transaction Details logs can be found in the log file: `trace.log`.

## Restarting the IBM Electronic Service Agent application

Follow the steps given in the below procedure to restart the IBM Electronic Service Agent application.

1. Check if any change has been made in the *conf.properties* file at the following location: `/usr/esa/esa-chcc/conf/conf.properties`
2. Save the changes by pressing:
   ESC `:wq!`.
3. Stop the IBM Electronic Service Agent application using the command:
   `stopsrc -s IBM.ESAGENT`
4. Start the IBM Electronic Service Agent application using the command:

```
startsrc -s IBM.ESAGENT
```

5. The IBM Electronic Service Agent has been restarted.

## Unconfiguring Electronic Service Agent

You should not unconfigure IBM Electronic Service Agent unless directed to do so by a customer service representative.

To unconfigure Electronic Service Agent, complete the following steps:

1. Log on to the system as `root` for AIX.
2. Enter **`smit`** at the AIX command prompt.
3. Select **Electronic Service Agent**.
4. Select **Unconfigure Electronic Service Agent**.

## Uninstalling Electronic Service Agent

Uninstalling removes the Electronic Service Agent code and configuration information. The configuration information contains contact and location information, and operational settings. Before you uninstall Electronic Service Agent, consider whether you want to use the same configuration information for another system or later on this system.

## Electronic Service Agent commands

AIX Release 7.3.3.1 version supports the below CLI command:
`/usr/esa/bin/esacli status`

The output appears as shown below:

```
# /usr/esa/bin/esacli status
IBM Electronic Service Agent is active
```

## Troubleshooting Electronic Service Agent

Follow these general troubleshooting guidelines when monitoring Electronic Service Agent.

### Set the Electronic Service Agent trace level

Working with IBM Support to analyze the messages can help you diagnose problems. If the trace level is set to Severe or Error, you can change it to Warning or Information to gather more information about the problem. For more information, see the section “Setting the trace level” on page 15.

### Migration from AIX 72 version to AIX 73F

Post migration from 72 version to 73F, ensure that Electronic Service Agent is activated and in running state. We can activate using below command:

```
/usr/esa/bin/activator -c -m 'Company name' -n 'Name of the contact
person' -t 'Telephone number of the contact person' -e 'Email address
(myuserid@mycompany.com)' -s 'Telephone number where the system is located'
-r 'Street address where the system is located' -y 'City where the system is
located' -a 'State or province where the system is located' -z 'Postal code
where the system is located' -b 'Building, floor, and office of the system' -u
'Country or region where the system is located'
```

### View the activity log to see if any problems are recorded

The activity log shows the date and time a problem occurred, along with a description of the problem. See Displaying the activity log.

If a problem occurs when the system attempts to electronically send a problem or service information to IBM Support, there can be many possible reasons why the transmission might not be successful. Electronic Service Agent depends on functions of the operating system to be working correctly. It includes managing the Electronic Service Agent daemon and system connectivity. Normal system problem determination is suggested for this type of problem.

## Verifying that System configuration information was sent to IBM Support

System configuration information collection activity shows the type of System configuration information that is collected, when it was last collected, and when it was last sent.

If system configuration information is being collected or transmitted, the last collected and last sent activity is not shown until the tasks are completed.

The tasks of collecting system configuration information and sending system configuration information take time to run. The time needed to collect and send information is influenced by the size of the system, processing load, and the speed of the connection. The following is the summary of the collection and transmission process.

1. A collection task collects new system configuration information.
2. After the collection is complete, a task is started to perform the following steps:
   a. Connect to IBM Support.
   b. Send the system configuration information.

## Electronic Service Agent activation fails

Electronic Service Agent activation might fail due to any of the following reasons:

1. Connectivity test fails - See section "Electronic Service Agent activation fails" on page 22
2. Multiple Instances of ESA are running -
   a. To check whether there are any instances of ESA that are already running, run this command: **ps -aef | grep esa**.
   b. To stop the instances of ESA that are already running, run this command: **kill -9 <<pid of ESA instance>>**.
   c. Always use SMITTY for a smooth shutdown of ESA.

**Note:** If the problem is not still resolved, contact IBM support. For uploading the required information to IBM support for their further analysis, see the section "Steps to run esaffdc command" on page 22.

## Issue with disk space

Use any of the following commands to increase the disk space for a particular file system:

1. **chfs -a size=<Size> <Filesystem path>**
   For example, to set the space of */var* file system to 10 GB, **chfs -a size=10GB /var**.
2. **chfs -a size=+<Size> <Filesystem path>**
   For example, to increase the space for */usr* file system by 6 GB, use the command - **chfs -a size=+6 /usr**.

## Steps to run esaffdc command

Follow these steps to run the **esaffdc** command:

1. Change the directory to `/usr/esa/bin` by using the command: **cd /usr/esa/bin**.
2. Run the following command: **esaffdc**

This command generates a tar file in the **esaffdc-ESAFFDC-mm-dd-yy.tar** format in the folder `/usr/esa/bin`.

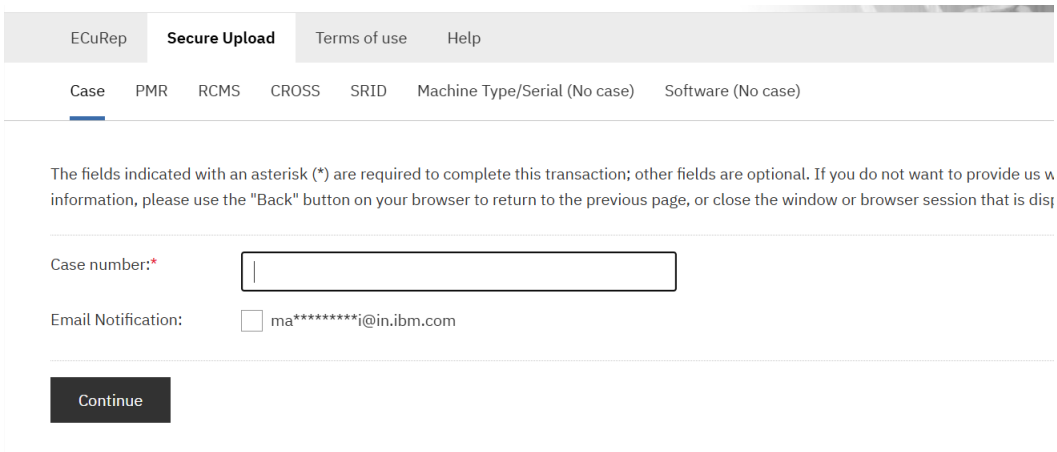
3. Upload the generated file to IBM. For more information on uploading files to IBM, see section "Steps to upload files to IBM" on page 23.

**Note:** Root access is required to run these commands.

### Steps to upload files to IBM

Follow these steps to upload files to IBM:

1. Log on to **ECuRep** with the following URL: https://www.ecurep.ibm.com/
2. Navigate to the Secure Upload page using this link: https://www.ecurep.ibm.com/app/upload_sf
3. Provide the ticket number (Salesforce ticket number) and upload the logs.




### Proxy Issue

If all your ESA transactions are failing, verify that the DNS is resolvable and the DNS is enabled for outbound communication.

**Related tasks**

Setting the trace level
Trace level determines the message severity recorded during Electronic Service Agent activity.

## Appendix - Legacy Server Connections

This table contains the IBM server information that is used by IBM Electronic Service Agent before AIX release 6.1 TL9 SP5, AIX 7.1 TL3 SP5, and AIX 7.2. This appendix exists for reference only.

*Table 2. Traditional Server connections*

| DNS name | IP address | Port | Purpose |
|---|---|---|---|
| eccgw01.boulder.ibm.com | 207.25.252.197 | 443 | Transmission of discovery data |
| eccgw02.rochester.ibm.com | 129.42.160.51 | 443 | Transmission of discovery data |
| www-945.ibm.com | 192.42.26.224 | 443 | Problem reporting |
| www-945.ibm.com | 192.42.50.224 | 443 | Problem reporting |
| www-945.ibm.com | 192.42.42.224 | 443 | Problem reporting |
| www6.software.ibm.com | 170.225.15.41 | 443 | Extended error data and system configuration reporting |

| Table 2. Traditional Server connections (continued) | | | |
|---|---|---|---|
| **DNS name** | **IP address** | **Port** | **Purpose** |
| www.ecurep.ibm.com | 192.109.81.20 | 443 | Extended error data and system configuration reporting |
| www.ibm.com | 129.42.56.216 | 80, 443 | Configuration updates |
| www.ibm.com | 129.42.58.216 | 80, 443 | Configuration updates |
| www.ibm.com | 129.42.60.216 | 80, 443 | Configuration updates |
| www-03.ibm.com | 204.146.30.17 | 80, 443 | Configuration updates |

**Note:** If your AIX version is earlier to 6.1 TL9 SP5, AIX 7.1 TL3 SP5, and AIX 7.2, you are likely connecting to the traditional IBM server environment. It is highly recommended that you change your network firewall configuration to allow outbound connections to the new environment to take advantage of the new features. If your network does not allow access to the new servers, ESA transactions to the new servers fail and ESA then reattempts to connect to the traditional servers.

# Reference information

This section includes additional reference materials related to Electronic Service Agent.

## How to read syntax diagrams

Review the conventions that are used in syntax diagrams to understand the command descriptions.

Syntax diagrams consist of options, option arguments, and operands.

**Options**
*Options* indicate input that affects the behavior of the base command (for example, `-l` specifies long output) or required input that you can specify in different ways (for example, you can target objects using either `-n` *`name`* OR `-N` *`groupname`* OR `-ac` *`objectclass`*). Options consist of either a hyphen and single letter (for example, `-h`) or two hyphens and multiple letters (for example, `--help`). The single letter format is the short form of the multiple letter format, and the two formats are functionally interchangeable when issuing a command.

**Option arguments**
Some options are followed by one or more *option arguments* that specify a value for the option. For example, with `-file` *`file_name`*, *`file_name`* specifies the name of the file on or with which to take action.

**Operands**
*Operands* are parameters at the end of a command that specify required user input.

Syntax diagrams adhere to the following conventions:

- Options and operands that are enclosed in brackets (`[]`) are optional. Do not include these brackets in the command.
- Options and operands that are enclosed in braces (`{}`) are required. Do not include these braces in the command.
- Options and operands that are not enclosed in either brackets or braces are required.
- Operands and option arguments that are italicized must be replaced with actual values.
- The names of options are case-sensitive and must be typed exactly as shown.
- Options preceded by two dashes (`--`) must be specified in their entirety.
- A pipe (`|`) character signifies that you can or must, depending on the enclosing characters, choose one option or the other. For example, `[a | b]` indicates that you can choose either a or b, but not both. Similarly, `{a | b}` indicates that you must choose either a or b.
- An ellipsis (`...`) signifies that you can repeat the operand and option argument on the command line.

- A dash (-) represents standard output.

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