IBM

Introduction to Assist On Site For Use With z/OS

- What is AOS?
- Preparing for AOS
- Using AOS

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Redpaper

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International Technical Support Organization

Introduction to Assist On Site For Use With z/OS

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

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Preface

This IBM® Redpaper™ publication will help you plan for, install, and use IBM Assist On Site (AOS).

Assist On Site is a Web-based tool that enables a support representative in IBM to analyze a dump of your system remotely over a secure connection. It lets the support representative see the desktop of a PC running the AOS plug-in, and optionally control the mouse and keyboard. This allows investigation of critical problems to begin as quickly as possible.

The AOS tool can be used to assist customers with problems on a wide variety of platforms. This paper focuses specifically on its use in a z/OS® environment.

The team who wrote this paper

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1

Introduction to Assist On Site

This chapter provides a description of the Assist On Site tool and helps you understand what situations it is applicable to and what the considerations are for its use.

1.1 What is Assist On Site?

Assist On Site (AOS) is a Web-based IBM tool that enables a support representative in IBM to analyze a dump on your system remotely over a secure connection. The AOS tool is used by IBM to assist customers with problems on a number of platforms; however, this document focuses specifically on the use of AOS in a z/OS environment. For z/OS systems, AOS is mainly intended to be used to view very large dumps related to high impact problems in the interim before they reach IBM.

AOS is conceptually simple: it provides an IBM representative with the ability to see the desktop of a PC that is running the AOS plug-in, and to optionally control the mouse and keyboard. As a result, it provides the representative with the ability to use IPCS on your system to analyze the dump. The net effect is the same as if the IBM representative was located in your site and logged on to your system to view the dump.

Using the AOS plug-in, the customer connects to the AOS server in IBM via the Web. On the IBM side, the support representative also connects to the AOS server via the IBM Intranet. All communication between the support representative and the customer PC is via the secure AOS server. This is shown in Figure 1-1.

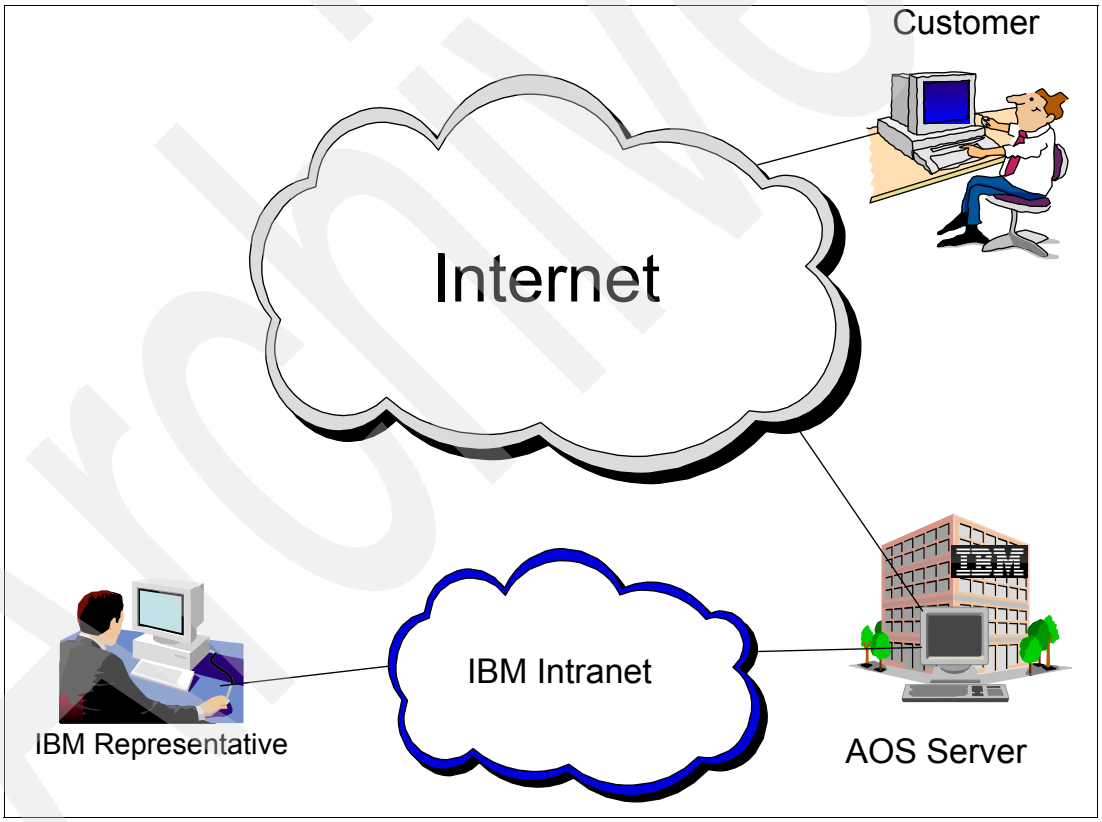

Figure 1-1 Assist On Site - the complete picture

Assist On Site replaces the previously available SoftwareXcel offering. Whereas SoftwareXcel required a leased line for the representative to access your system, AOS is Web-based and therefore removes that requirement.

1.2 Is AOS a chargeable service?

At the time of writing, there is no charge for AOS. The AOS plug-in can be downloaded for no charge, and the use of AOS to view your dump is simply an extension to your existing support agreement with IBM.

1.3 What is AOS used for?

In a mainframe environment, AOS is specifically intended as a way to let IBM start analyzing large dumps while the dumps are still in the process of being transmitted to IBM. This allows investigation of critical problems to start as quickly as possible. Depending on the process you use to send dumps to IBM, the ability for IBM to immediately access your dump may shave precious hours off the time required to identify the cause of the problem and, potentially, the resolving fix.

Note that AOS is not intended as a replacement for sending your dumps to IBM. The response time when accessing the dump remotely would not be the same as when the support representative has access to the dump on an IBM system. Also, the representative may have additional tools available in IBM to enhance and expedite detailed dump analysis, so analyzing the dump on your system using AOS is a more time-consuming process than processing the dump in IBM. The main advantage of AOS is that the support representative can start on the job of analyzing the dump sooner.

1.4 How would I “invoke” AOS?

If you have suffered an outage and you need IBM to start investigating the problem immediately, you can tell the representative that you are set up for AOS and would be willing to use it for this problem. Depending on their understanding of the problem and the information they have available to them, the support representative may decide to use AOS or they may feel they have enough information to start their investigation pending the arrival of your dump.

Obviously you should have set up your end of AOS in advance. The whole objective of AOS is to expedite the start of the analysis process, so you do not want to have to delay that by only starting to set up AOS at the time you want to use it.

Chapter 2, “Preparing for and installing AOS” on page 5 contains the information you need to set up and test AOS in your installation.

Tip: The actual installation and use of AOS is very easy. However, organizing the security accesses and legal review that your company may require typically takes many weeks. That main goal of this paper is to encourage customers to do that work long before AOS is actually needed. This will ensure that AOS is immediately available should you and IBM agree that AOS is the most appropriate tool in a particular situation.

1.5 What about security?

Everyone is rightly concerned about IT security these days. We discuss the specific security aspect of AOS in detail in Chapter 2, “Preparing for and installing AOS” on page 5. However,

for now we simply say that AOS is designed to provide a secure capability specifically to allow IBM support representatives to analyze dumps on your system, that you will at all times be able to see all actions being carried out by the support representative, and that you can take control of the session at any time. Furthermore, the data that is passed between your AOS PC and the IBM support representative is both compressed and encrypted and can only be viewed using the AOS software in the AOS server.

2

Preparing for and installing AOS

This chapter leads you through the steps required to prepare a PC for the installation of AOS. It also discusses security considerations and how to test the install to ensure it is functioning correctly. Guidance is provided on ways to optimize the security and usability of AOS.

2.1 Setting up the AOS environment

The actual AOS software that runs in the customer site is small and simple and can be installed in minutes. Therefore, the bulk of the work involved in preparing for AOS involves setting up the environment to provide the control and security that you require. We discuss all the steps that you need to complete, through to the point when you have AOS up and running.

2.2 Setting up the AOS workstation

In order to use AOS to have an IBM support representative view a dump on your system, you need to have a workstation on which the AOS plug-in will be installed. The requirements for that PC are:

- It must have a connection to the Internet. The connection speed should be at least 56 Kbps to provide reasonable response times.
- The PC should be a Pentium® class or faster, running Windows® 95, 98, 2000, Me, NT 4.0, or XP.
- It must have one of the following browsers installed:
  - Internet Explorer 4.0 or later
  - Netscape Navigator 4.0 or later
  - Mozilla Firefox 1.0 or later
- It must have access to ports 80, 443, and 8200 (discuss with your firewall administrator if you are unsure about this).
- If possible, it should have the authority to make direct outgoing TCP connections, or have access to a SOCKS server or an HTTP proxy.
- It should have network access to the z/OS system the support representative will use to access the dump. Note that this does *not* have to be the system that the dump was created on.
- It should have Personal Communications or a similar program that supports 3270 sessions to the mainframe.

The AOS code that resides on the PC consists of a browser plugin that is downloaded and installed each time you initiate an AOS session with IBM. At the end of each session, the plugin deletes itself. The plugin is less than 1 MB, so it typically downloads in just seconds.

Before you decide on a particular PC to act as your AOS PC, you may wish to consider the points discussed in 2.4.1, “The AOS PC” on page 8.

Once you have identified your PC and ensured that it has all the prerequisites in place, you can run a small test to ensure that you can successfully communicate with the AOS server in IBM. To download the test program, go to `http://www.ibm.com/support/assistonsite/`. About half way down the page is a link that says “Assist On-Site Connectivity Tester.” Clicking this link will download and execute a program called `aostester.exe`. After a few seconds, you will see a small window, as shown in Figure 2-1 on page 6.

Figure 2-1 aostester.exe message

If you have a client firewall installed, you might see a message indicting that program `aostester.exe` is trying to access the Internet. You should permit this access. The program will then try to access a number of servers in IBM, using each of ports 80, 443, and 8200. When the program completes, you should see a report similar to that shown in Figure 2-2.

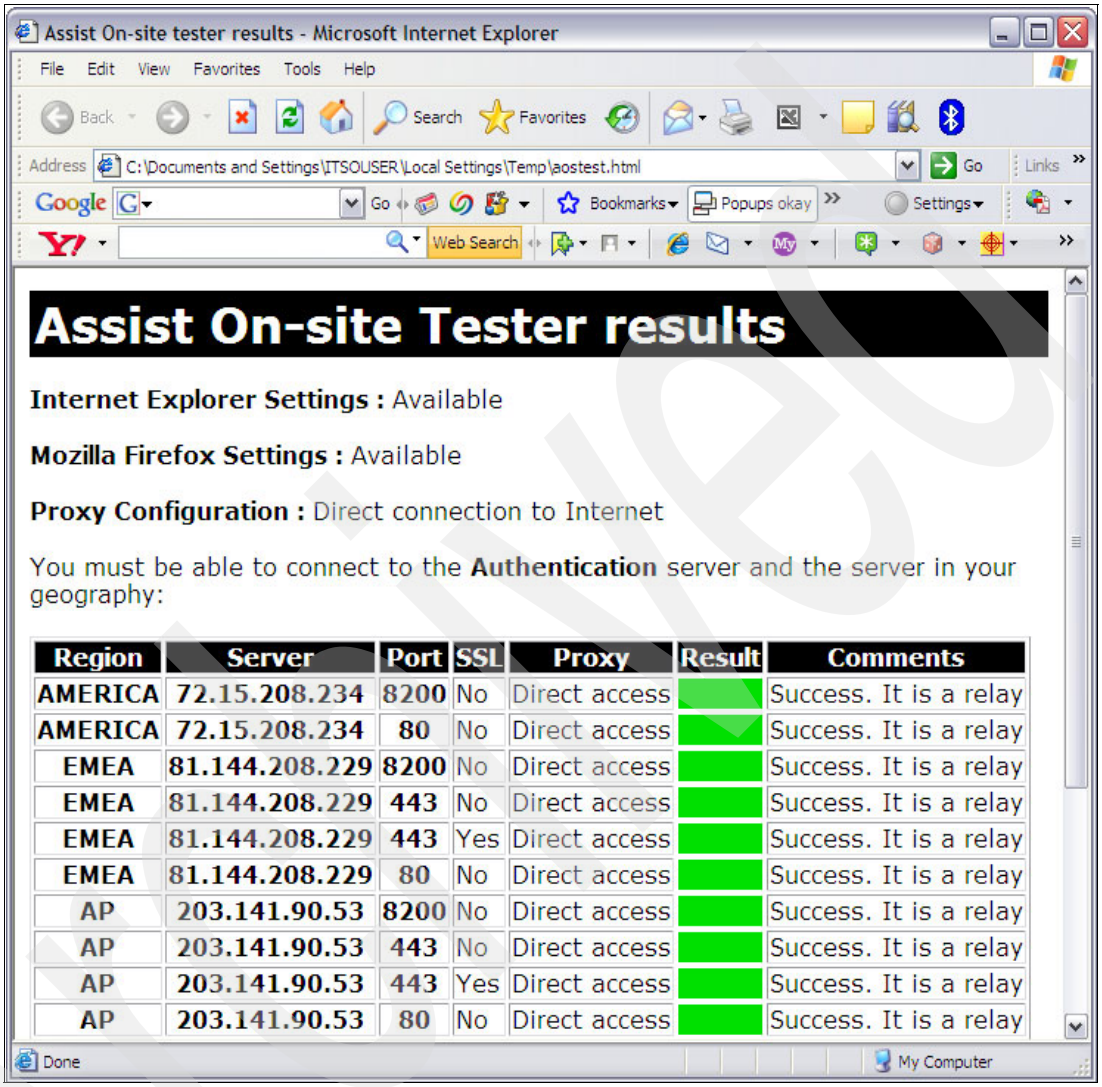

Figure 2-2 aostester.exe Results

The person using the console must be able to connect to aos.us.ihost.com with port 80 or 8200. If you want to use the other relays, you have to be able to connect to the other server on either port 80, 8200, or 443.

If any of the tests fail, refer to: `http://www.ibm.com/support/docview.wss?uid=swg21247084` and `http://www.ibm.com/support/docview.wss?rs=0&q1=trcaos&uid=swg21232485` for suggestions and possible resolution. More than likely it is a network security issue, in which case you should take the results and the Web site listed here to your network security group and see if they can help you resolve the issue. It is not unusual for changes in this area to take weeks before they can be implemented, so allow yourself plenty of time for this step in the installation process.

Assuming that all the tests are successful, your PC is now ready to take part in an AOS session.

2.3 TSO userid

In order to use IPCS to view and analyze the dump, the support representative will need access to TSO and ISPF. They will also require access to IPCS and the data sets required to run IPCS (SYS1.SBLS* and a dump directory data set (DDIR)). In addition, read access will be required to SYS1.PARMLIB and SYS1.MIGLIB in order to be able to successfully use IPCS. The userid should also be defined with a region size large enough to view a stand-alone dump.

The system that the support representative will use to view the dump should be running the same or higher release of z/OS as the system that created the dump.

Tip: To ensure that it will work in a real situation, we recommend testing the TSO userid in advance to make sure that it has all the attributes and accesses required to view a typical stand-alone dump.

2.4 Tips for maximizing security

There are two things to consider in relation to controlling which resources the IBM support representative will have access to during the AOS session: the PC that is running the AOS session, and the z/OS system that the representative will log onto to view and analyze the dump.

2.4.1 The AOS PC

During the AOS session, the AOS PC can only effectively be used by one person—either you or the IBM support representative. Therefore, if you choose to run AOS on one of the systems programmer's workstations, that person will effectively not be able to use that workstation for any of his or her normal work activities during the AOS session. Also, while you can see everything that the representative is doing on the PC, the fact is that all resources on that device are potentially accessible to the support representative.

For both of these reasons, we recommend having a dedicated PC that is only used for AOS. The PC does not need to meet very high performance specifications, and it only needs a minimal amount of software installed, so old PCs that are available in most IT departments would probably do the job nicely.

Having such a PC ensures that there is no concern about the IBM support representative being able to see anything on the PC that you would not wish them to see. Also, while the representative is busy looking through the dump, all the system programmers can get on with their normal work activities.

For added security, you might wish to locate the PC somewhere within view so that its activity can easily be monitored while the AOS session is active. You might even decide to leave that PC powered-off while it is not being used.

Note: Regardless of which PC you use to run the AOS session, all communication between that PC and IBM is encrypted using 128-bit encryption. The data is also compressed, and can only be processed by AOS.

For more detailed information about the security mechanisms employed by AOS, refer to the AOS Security Whitepaper, available on the Web at:

```
http://www.ibm.com/support/docview.wss?uid=swg21247084
```

2.4.2 TSO userid

The userid that will be used by the support representative must be able to use IPCS to view and analyze the dump. However, that userid should only need a minimal level of access to your system. Specifically, it does not need to have the level of access that system programmer TSO IDs typically have.

You might wish to use a unique high level qualifier for any dump data sets that will be viewed using AOS. If you limit the AOS TSO userid to only being able to see those data sets (rather than DUMP.**), this again reduces the number of data sets that the support representative will be able to view.

There are also security options related to IPCS. For example, you can use the RACF® FACILITY class profile called BLSACTV.ADDRSPAC to protect access to ACTIVE storage from IPCS. If this profile exists, READ access is required to be able to view ACTIVE storage, so you would probably want to provide access to the RACF group containing your system programmers, but not to the AOS TSO userid.

You can also create a validity check module named BLSUGWDM that can be used to limit the TSO commands that can be issued from inside IPCS. More information is available in the chapter entitled “Providing Security for IPCS” in *MVS Interactive Problem Control System,* SA22-7595.

The system that is used to view the dump should be at the same or higher service and release level as the system the dump was created on. One way to achieve this is to log on to the userid on the system that created the dump. An alternative, and possibly more secure, option would be to copy the dump over to a system programmer sandbox system (which typically has no access to any production resources) and use that system for all dump analysis. Also, the system programmer sandbox systems are typically at a higher service or release level than the production systems, so they should be suitable for analyzing the dumps.

2.4.3 Process suggestions

There are some other small things you might like to consider. For example, before you start the AOS session, you will probably want to ensure that no other applications are active on the AOS PC.

And, rather than giving the support representative the userid and password for their TSO ID, you may want to start the 3270 session and log on to that ID in advance of starting the AOS session. That way, the representative can immediately start working on the dump, and you do not have the concern of giving the password to someone outside your company.

Another possible option is to revoke the AOS userid between AOS sessions; however, we do not really recommend this. For one thing, that ID should not have access to any sensitive resources anyway. And for another, you probably do not want to be faced with the added delay and administration involved in getting the ID resumed when you need to use it (remember that the whole idea of using AOS is to save time).

We have stressed various strategies for protecting your systems because we understand how important the privacy and integrity of information is to our customers. But even beyond that,

the service representatives who work on the IBM side of AOS are very senior, trusted, and experienced employees, who have the best interests of our customers as a primary focus.

3

Using AOS

After you have set up an environment that provides the security and control that you require, you are now ready to use AOS. This chapter takes you step-by-step through the process of initiating, managing, and ending an AOS session with IBM.

3.1 Initiating an AOS session

When you agree with the IBM support representative that they will use AOS to view and analyze the dump on your system, a connection code must be entered by both you and the representative. Note that speed is very important here—the connection code is only good for 5 minutes after it is presented to the representative[1].

Therefore, before the representative requests the code from the AOS server, we recommend that you start completing the Assist On-Site Request Form. To access this form, go to `http://www.ibm.com/support/assistonsite/`. Click the `IBM Assist On-site Request Form` link located about 1/4 of the way down the page. You will be presented with the form shown in Figure 3-1.

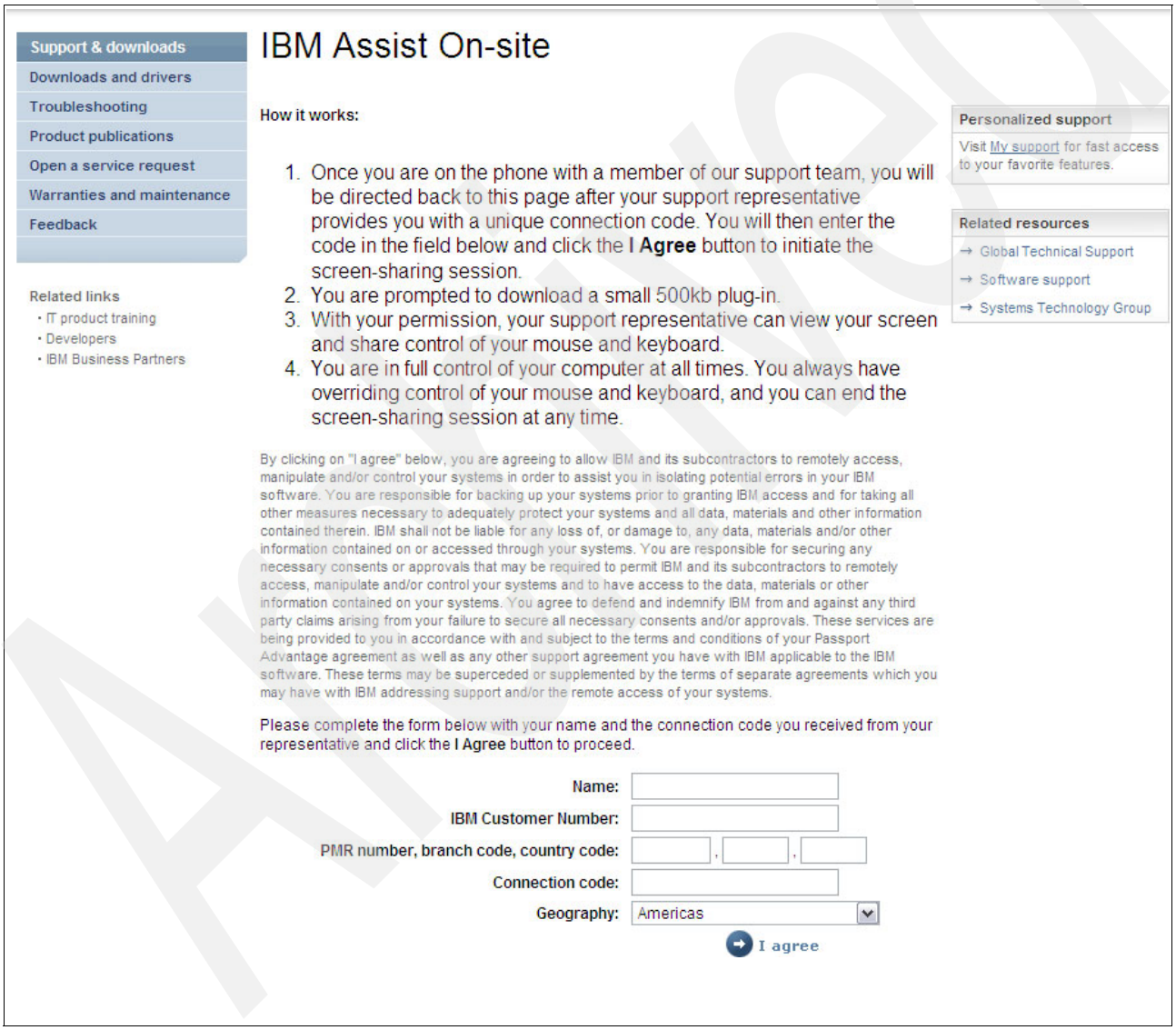

Figure 3-1 Assist On-Site Request Form

[1] The support representative can extend the time by a maximum of ten minutes; however, you must specifically request this if you think that the session will not be established within the original five minutes.

After you have filled in the fields with your name, IBM Customer Number, the full PMR number, and the geography, ask the support representative to obtain the connection code. When you enter the connection code provided by the support representative and click I Agree, you will be presented with the window shown in Figure 3-2.

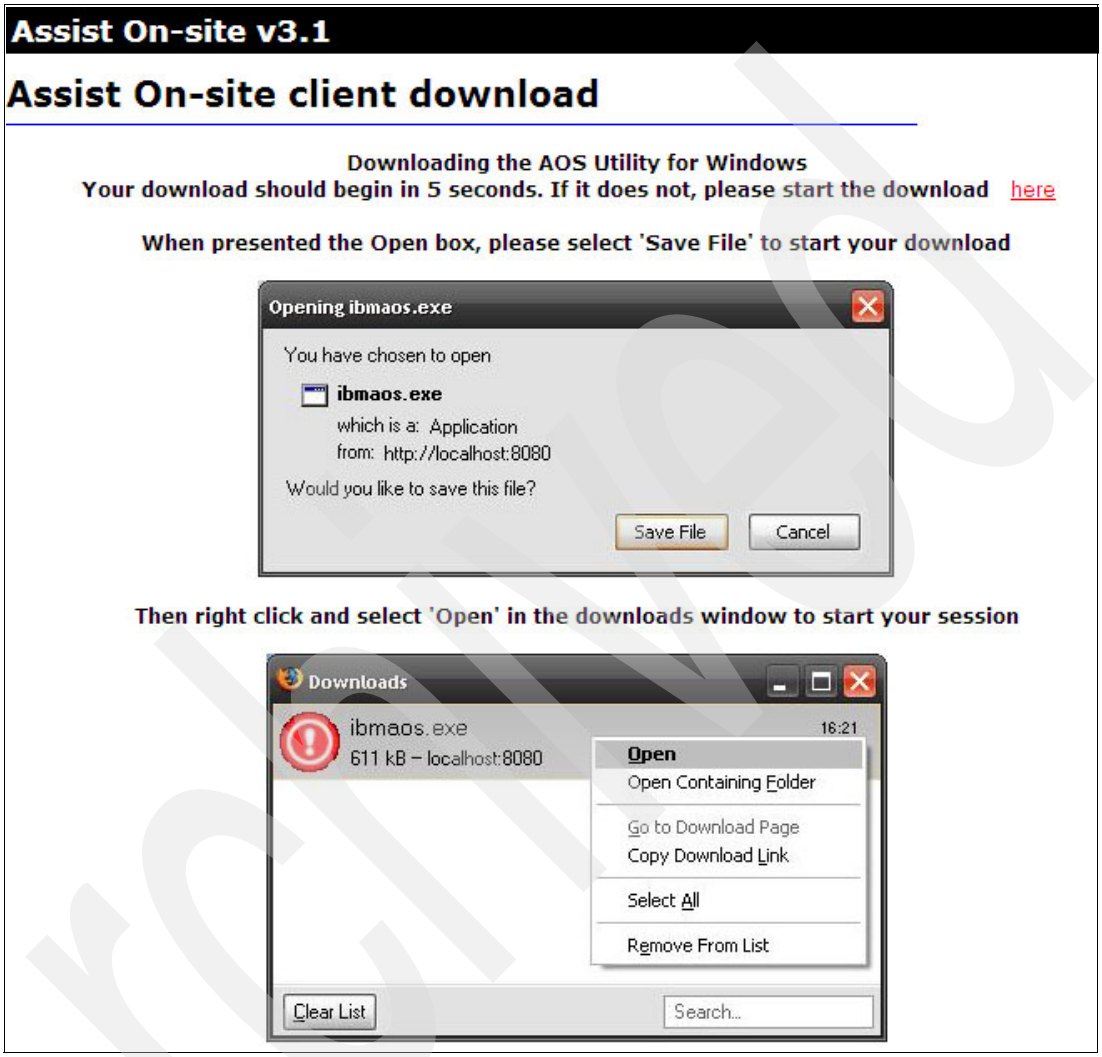

Figure 3-2 Downloading the AOS plugin

After a few seconds the download of the `ibmaos.exe` file should automatically start. Click **Save File** to save the file to your downloads folder. When the download completes, click the exec to run it. You may get a security warning at that point, stating that the publisher could not be verified. If this happens click **Run** to get the installation of the AOS plugin to proceed.

After a few seconds, you should see a window similar to the one you observed during the connection test, informing you that Assist On Site is connecting to an IBM Web site. If you do not complete this process quickly enough, you will receive a message as shown in Figure 3-3 on page 14.

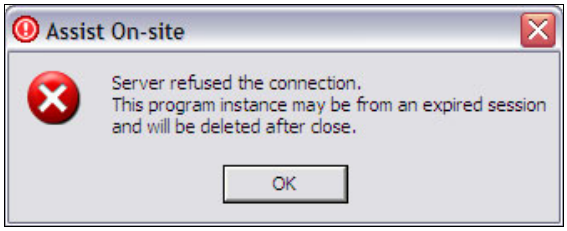

Figure 3-3 Error message if session is not started quickly enough

When you click **OK**, you will be presented with the window shown in Figure 3-4. In this case, we know that the reason for the failure was that the session was not started quickly enough, so it is not necessary to complete this form.

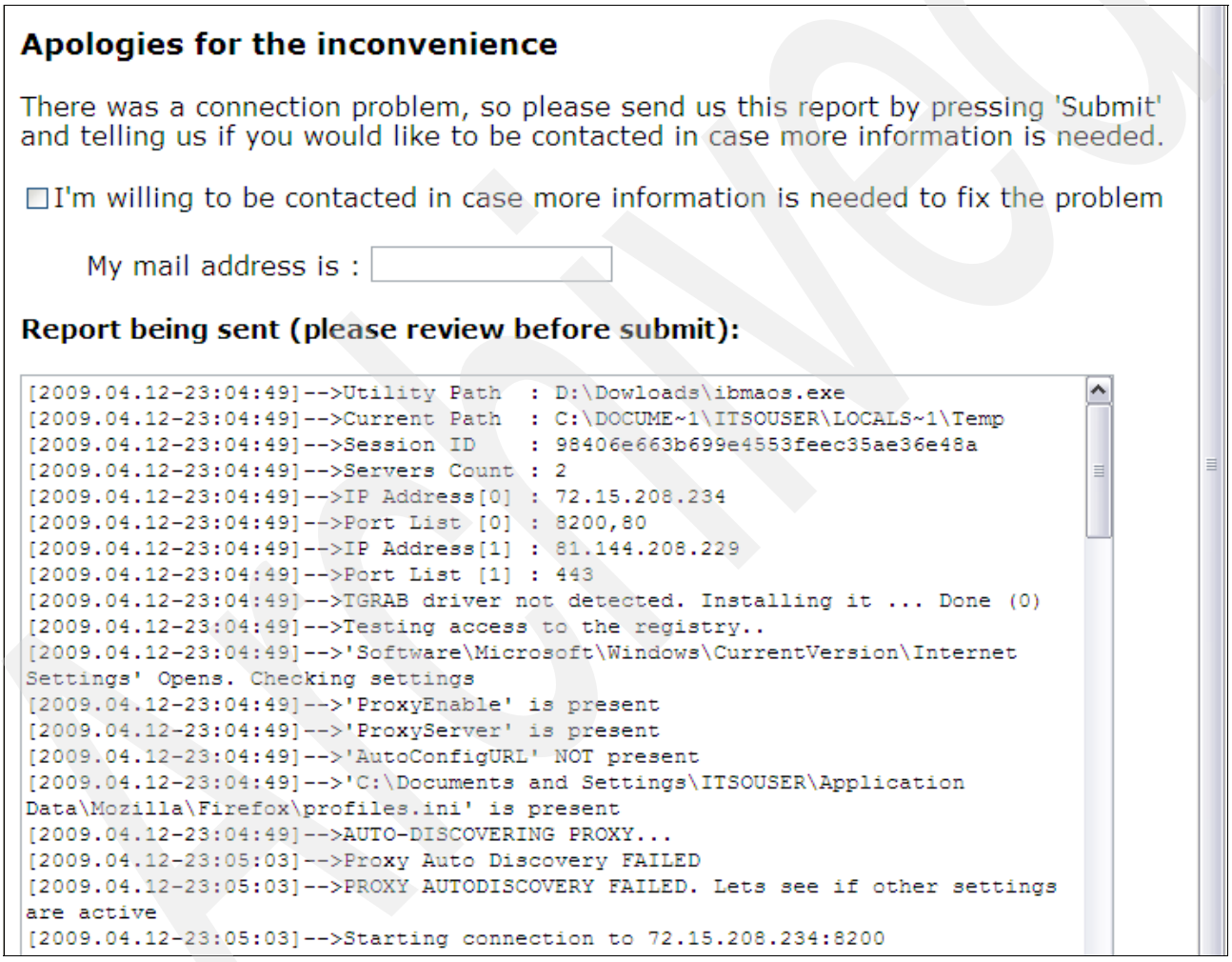

Figure 3-4 AOS Connection error submission report

To establish the AOS session, you will need to go back to the AOS home page (http://www.ibm.com/support/assistonsite/), fill in all the information again, and ask the support representative for a new connection code. The reason you must start the session so quickly is to ensure security. If you do not start the session in a timely manner, or if the session is dropped, you and the support representative must get a new connection code and specify that code when starting the session with the AOS server.

Assuming that you start the AOS session within 5 minutes of the support representative requesting the connection code, you will see the window shown in Figure 3-5.

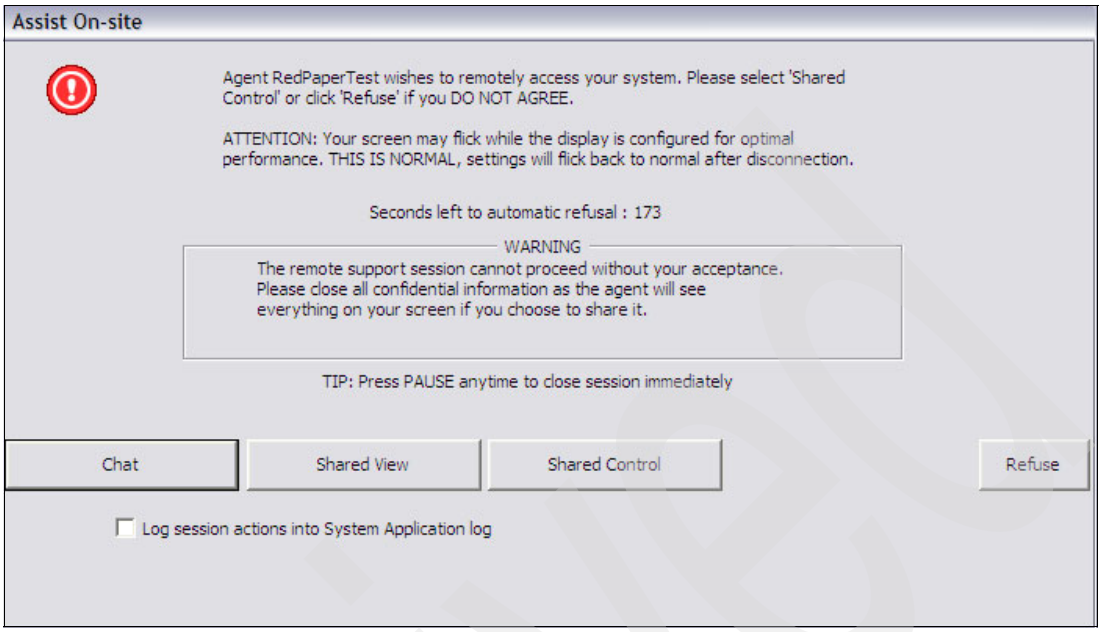

Figure 3-5 AOS Session options

There are a few things on this window that you should be aware of, starting with the third paragraph down. You will notice in the figure that it says “Seconds left to automatic refusal : 173”. This means that if you do not select one of the three options (Chat, Shared View, or Shared Control) within that number of seconds, the session will be cancelled and you will need to start all over again. In this case, you will see the window shown in Figure 3-6.

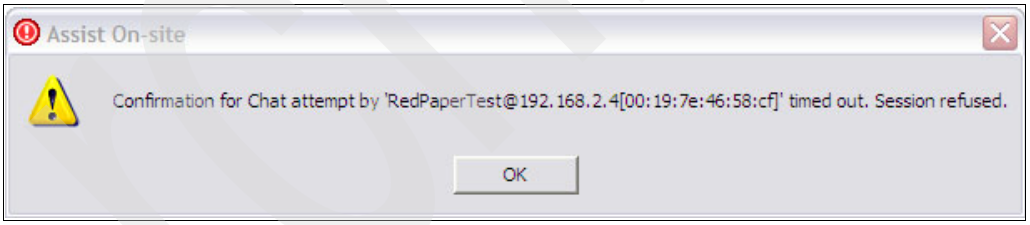

Figure 3-6 Automatic timeout message

The three options have the following meanings:

Chat This will limit the session to giving you and the support representative the ability to chat back and forth. You can also cut and paste text into the chat window. However, given that the objective of AOS is to speed up problem resolution, this is not a particularly effective approach because the support representative must ask you to issue all the IPCS commands, and then cut and paste the response back to the chat session.

Shared View This will allow the support representative to view your PC desktop; however, they do not have any control over it.

This is more effective than the Chat option because you do not need to cut and paste the response to the IPCS commands. On the other hand, you still need to issue all the IPCS commands on behalf of the support representative.

Shared Control This is the most effective solution from the perspective of time efficiency. In this mode, the support representative can again see the desktop, but he or she also has the ability to issue the IPCS commands. You can still see everything that is happening, and can take back control of the desktop at any time simply by moving your mouse. This is the mode that we recommend simply because it maximizes the capability of AOS.

Just so you can see what each one looks like, we will step through each option. Also, we want to point out a small window that will appear on your desktop, as shown in Figure 3-7. No matter which of the three options you choose, you always have the ability to end the session at any time simply by clicking **End Session** in that window.

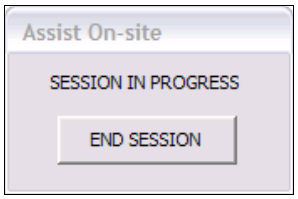

Figure 3-7 AOS End Session window

Chat window

If you click **Chat** in the window shown in Figure 3-5 on page 15, you will be presented with the window shown in Figure 3-8.

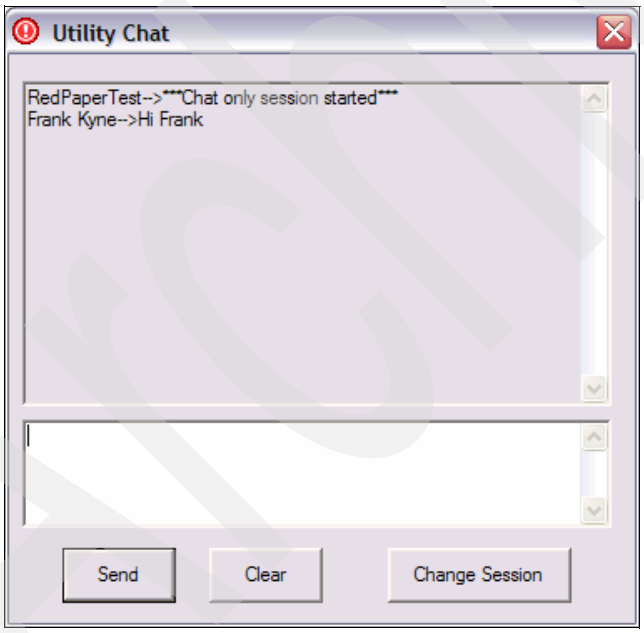

Figure 3-8 AOS chat window

In this window you can chat back and forth with your support representative. Typically, the representative will ask you to issue a command in IPCS and cut and paste the results in the chat window, as shown in Figure 3-9 on page 17.

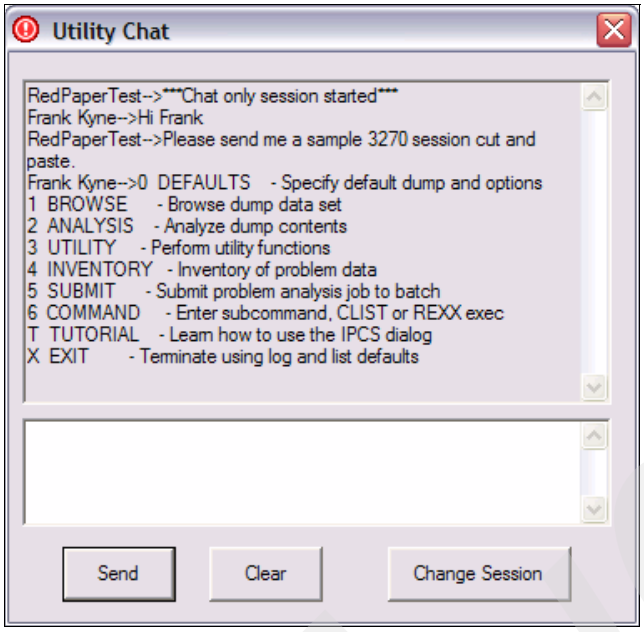

Figure 3-9 AOS chat window showing cut and paste activity

If you have any experience with dump reading, you will know that analyzing a dump requires many interactions, checking different parts of the dump, depending on what you find as you go along. For this reason, using AOS in Chat mode really is not a very effective way of analyzing a dump.

If you wish to change to a different mode, you can click **Change Session** in the AOS chat window. Note that the support representative also has the ability to request a change to a different mode. However, when the change is initiated by the support representative, you are presented with the window shown in Figure 3-10. You can decide whether you wish to switch to the requested mode or not.

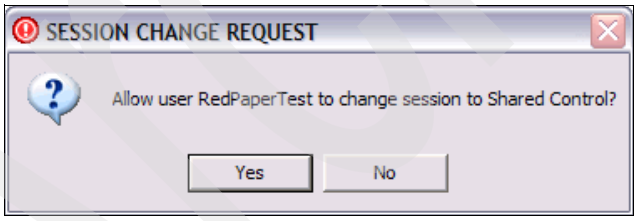

Figure 3-10 AOS plugin verification window for changing session options

When you click **Change Session**, you are presented with the window shown in Figure 3-11 on page 18. You can see that you have (in this case) the option to switch to a View Only Session or a Shared Control Session. To demonstrate what the View Only Session is like, we will select that option.

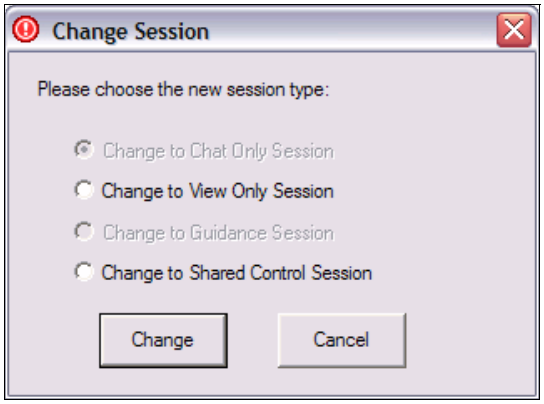

Figure 3-11 AOS plugin Change Session options

Tip: Before you enable shared view or shared desktop modes, you may wish to start a Personal Communications session and log on to the TSO userid that the support representative will be using, and navigate to the IPCS panels.

View Only Session

If you select the Change to View Only Session option (also known as Shared View mode), the support representative can see your entire desktop, so ensure that you close any applications that you would not want anyone else to see.

Note that when you switch to Shared View mode the AOS chat window will remain open and the AOS window that lets you stop the session will remain on your desktop, but other than that, there is no obvious indication that you are now in Shared View mode.

When you are in shared view mode, the IBM representative will have a window on his desktop, in which he is able to see the contents of your desktop. This is shown in Figure 3-12 on page 19.

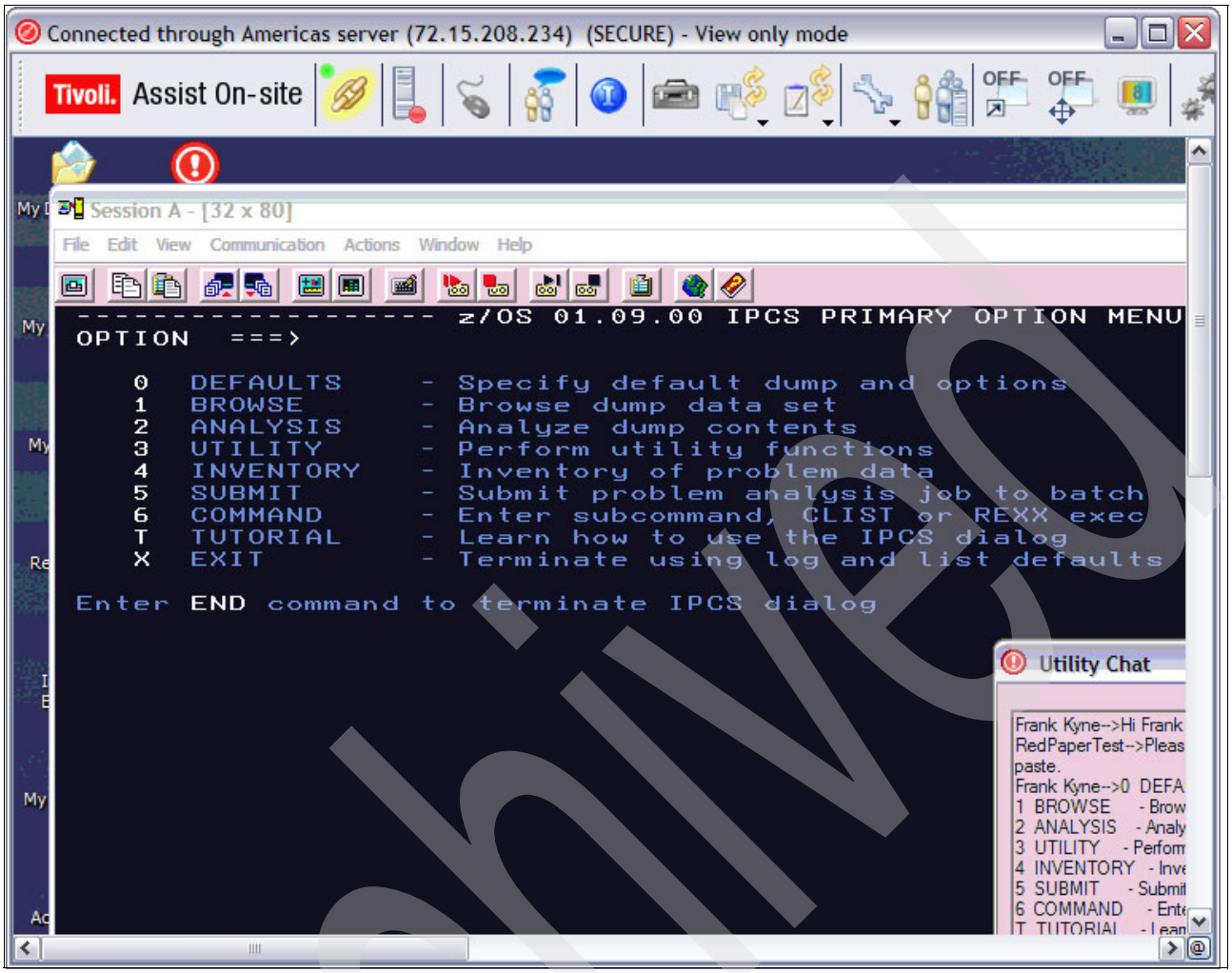

Figure 3-12 IBM Support representative view of shared desktop mode

This mode is an improvement in usability from chat mode, because the support representative can immediately see the result of any IPCS commands you issue, eliminating the need for you to copy the information back to the chat window. However, the support representative is still not able to issue any commands—this is purely read mode. The only “changes” the representative can make are to send you requests in the chat window, and have you enter them on his or her behalf.

The final, and most efficient, mode is shared desktop mode. Once again, you can switch to this at any time by clicking **Change Session** in the AOS chat window, and then selecting the Change to Shared Control Session option.

Shared desktop mode

In shared desktop mode, the support representative has the ability to control your mouse and keyboard. Everything that the representative does is reflected on your desktop, and you can override any action at any time by simply moving your mouse.

Apart from the fact that the support representative can now navigate around IPCS without having you enter every command on their behalf, there are some other nice capabilities available in this mode. For example, the representative can highlight areas of the screen that might be particularly of interest. The representative can also invite other IBM support

representatives (who must be authorized to use AOS) to the session, perhaps to help on a specific topic.

Hopefully the support representative will be able to determine the cause of your problem. But even if not, you have got a valuable head start on the process. When you wish to end the AOS session, you simply click the **End Session** button. The session will be dropped and you will be presented with the window shown in Figure 3-13.

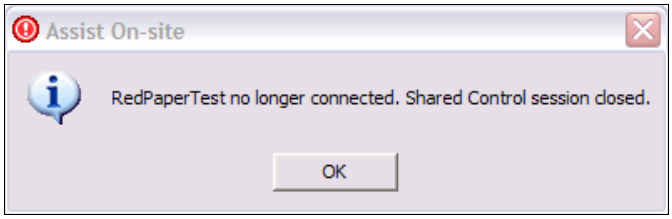

Figure 3-13 Confirmation that AOS session has been terminated

Once the session ends, the AOS plugin will automatically be deleted, and a browser session will be started containing a short survey asking about your experience with AOS. Please take a couple of minutes to complete this questionnaire; your answers are valuable input in helping IBM to improve the AOS tool.

3.2 Summary

As you can see, once you get past any initial hurdles associated with getting access to AOS (most likely related to your local network security), AOS is very easy to use. A little effort on your part will create a very secure and controlled environment for using AOS. Hopefully, you will not have many high severity dumps that warrant its use, but if the situation arises, AOS can provide valuable time savings and speed the identification of the root cause and potential fixes for the problem you encountered.

A

Sample job to define AOS TSO Userid

This appendix provides a sample job to define a minimal TSO userid that can be used by the IBM support representative to use IPCS to view your dump.

RACF definition job

The JCL shown in Example A-1 shows how you might set up a TSO userid that would be used by your IBM support representative to log on to TSO so they can use IPCS to view the dump.

In the job, the RACF groups and HLQs are used as follows:

TSOGROUP A group that all TSO users are connected to. This group would have access to the data sets listed in the standard TSO logon procedure (ISPF data sets).

IPCSGRP A group that has access to the data sets required to use IPCS. These would typically be called something like SYS1.SBLS*.

AOSDUMPS.** The high level qualifier used for the dumps that you want the support representative to be able to browse.

UCAT and MCAT You will need to insert the names of your master catalog and the user catalog that will contain the data sets for the TSO userid.

Example A-1 Sample JCL to define TSO ID for IBM support representative

```
//ADDUSER1 JOB (999,POK),'ADD USER***',CLASS=A,REGION=4096K,
//             MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*****************************************************************
//IKJEFT   EXEC PGM=IKJEFT01,REGION=6000K
//SYSUADS  DD DSN=SYS1.UADS,DISP=SHR
//SYSLBC   DD DSN=SYS1.BRODCAST,DISP=SHR
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
  ADDUSER IBMAOS1 PASSWORD(37DH9228) NAME('IBM PSR') +
           UACC(NONE) DFLTGRP(TSOGROUP) +
           TSO(ACCTNUM(xxxxxxxx) PROC(IKJACCNT) SIZE(2000000) +
           MAXSIZE(0) UNIT(SYSALLDA))
  PASSWORD INTERVAL(1) USER(IBMAOS1)
  CONNECT   IBMAOS1 GROUP(IPCSGRP) UACC(NONE)
  PERMIT   AOSDUMPS.** ACCESS(READ) ID(IBMAOS1)
LISTUSER  (IBMAOS1) TSO
  ADDSD     'IBMAOS1.**' UACC(NONE) OWNER(IBMAOS1)
  LISTDSD   DATASET('IBMAOS1.**')
  SETROPTS REFRESH RACLIST(TSOPROC ACCTNUM PERFGRP TSOAUTH)
/*
//STEP2    EXEC PGM=IDCAMS,REGION=6000K
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  DEFINE ALIAS -
    (NAME(IBMAOS1) RELATE(UCAT.whatever)) -
      CAT(MCAT.mcatname)
```

Every installation has different RACF conventions and different data set naming standards, so the only thing we can guarantee is that you *will* need to customize this JCL. Hopefully the changes will be minimal.

Related publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this paper.

Online resources

These Web sites are also relevant as further information sources:

- Introduction to AOS

  http://www.ibm.com/support/assistonsite/
- IBM AOS Security Whitepaper

  http://www.ibm.com/support/docview.wss?uid=swg21247084
- IBM AOS Network Access considerations

  http://www.ibm.com/support/docview.wss?rs=0&q1=trcaos&uid=swg21232485

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ibm.com/services

Introduction to Assist On Site For Use With z/OS

What is AOS?

Preparing for AOS

Using AOS

This IBM Redpaper publication will help you plan for, install, and use IBM Assist On Site (AOS).

Assist On Site is a Web-based tool that enables a support representative in IBM to analyze a dump of your system remotely over a secure connection. It lets the support representative see the desktop of a PC running the AOS plug-in, and optionally control the mouse and keyboard. This allows investigation of critical problems to begin as quickly as possible.

The AOS tool can be used to assist customers with problems on a wide variety of platforms. This paper focuses specifically on its use in a z/OS environment.

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