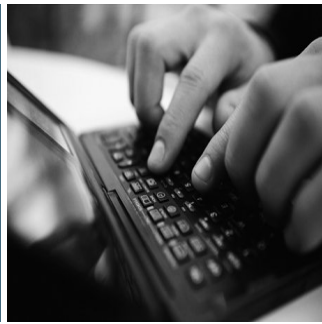


SAP NetWeaver Installation & Configuration Guide



Accelerated Application Delivery for SAP NetWeaver Client for Windows **Installation, Configuration, Administration**

Software Version 2.3 SP2

March, 2012

Document Version 1.0

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Typographic Conventions

Type Style	Description
<i>Example Text</i>	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, graphic titles, and table titles
Example text	File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example text	User entry texts. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE TEXT	Keys on the keyboard, for example, F2 or ENTER.

Icons





Icon	Description
	Caution
	Note or Important
	Example
	Recommendation or Tip

Table of Contents

1.	Accelerated Application Delivery for SAP NetWeaver - Client for Windows	5
1.1	Focus of This Guide.....	5
1.2	Operation Concept.....	5
1.3	Prerequisites.....	6
1.4	Glossary.....	6
2.	Preparing for Installation	8
2.1	Hardware and Software Requirements.....	8
2.2	AccAD Environment.....	8
2.3	Defining Your Installation Type	8
2.4	Preparing for Secure Communication.....	8
2.5	Information Required During Installation	9
3.	Installing the AccAD Client	10
4.	Configuring the AccAD Client.....	11
4.1	Accessing the AccAD Administrator	11
4.2	Accessing the CLI Using Telnet.....	11
4.3	Configuring the AccAd Client Manually	11
4.4	Configuring the AccAd Client Semi-Automatically	11
4.5	Restarting the AccAD Client.....	12
5.	Configuring the Client Workstation to Work with AccAD	13
5.1	Configuring DNS Manipulation Using the etc/hosts File.....	13
5.2	Configuring a DNS Proxy Method	14
5.2.1	Configuring the DNS Server of a Windows Machine	14
5.2.2	Configuring AccAD as DNS on a Linux Machine	14
5.2.3	Ensuring Automatic Failover in DNS Proxy Mode	15
6.	Monitoring the Application Delivery Engine.....	16
6.1	Using the Application Delivery Monitor.....	16
6.1.1	Configuring the AD Monitor.....	16
7.	Verifying AccAD Functionality.....	17
7.1	Getting Control Information.....	17
7.2	Testing Traffic.....	17
8.	Uninstalling the AccAD Client.....	18
9.	Additional Information	18
9.1	Restarting the AD Engine.....	18
9.2	Clearing the Cache Persistency	18
9.3	Upgrading the AD Engine.....	18

1. Accelerated Application Delivery for SAP NetWeaver - Client for Windows

1.1 Focus of This Guide

This guide describes the installation and configuration of an Accelerated Application Delivery for SAP NetWeaver (AccAD) client hosted on a Windows operating system.

The AccAD client for Windows is intended for up to 100 users. If you have more users in the remote office, we recommended that you use a Linux client.

The AccAD client for Windows is also suitable for demo purposes.

1.2 Operation Concept

The Accelerated Application Delivery for SAP NetWeaver solution enhances SAP NetWeaver by ensuring reliable, scalable, rapid, monitored, and secure access to enterprise applications in a distributed environment.

A single data center can deliver, at near-LAN speed, application services and content over WAN to users at multiple remote offices. The application delivery is performed by means of data compression and optimization technologies.

To deliver remote services to local users, the AD engine implements a symmetrical virtual representation concept:

- **Virtual services** represent the data center's physical application services at a remote office.
- **Virtual users** represent the actual remote office users at the data center.

Together, the service front end (SFE) and the client front ends (CFEs) maintain an unambiguous mapping of the respective IP addresses of the virtual and physical users and services.

At a remote office, the CFE emulates services from the data center that are requested locally by actual users. It redirects these requests to the SFE using a dedicated optimized delivery channel over WAN.

At the data center, the SFE communicates with application servers on behalf of the emulated users, which represent actual users at the remote office. The SFE requests and receives application services locally on behalf of the remote users and then compresses and delivers the received content over the same WAN channel to the CFE.

Traffic is optimized by reducing the amount of data transferred. This is enabled by an efficient compression mechanism, which is based on message analysis and recognition of patterns that are learned incrementally during previous communications. For this purpose, the system maintains a dictionary. The encoding procedure replaces the content chunks found in the dictionary with short keys, significantly reducing the message size. After encoding, the messages are further compressed with the help of a *gzip* algorithm.

1.3 Prerequisites

- An AccAD repository is installed
- An AccAD SFE is installed and configured
- Familiarity with AccAD operation concepts. (More information: the SAP NetWeaver Installation & Configuration Guide for Accelerated Application Delivery for SAP NetWeaver)

1.4 Glossary

The following table contains basic terms and concepts for Accelerated Application Delivery for SAP NetWeaver (AccAD).

The following table contains basic AccAD terminology and concepts, listed in alphabetical order.

Glossary:

Term	Description
AccAD Administrator	The web-based graphical user interface utility for administration and configuration of SAP NetWeaver Accelerated Application Delivery.
AccAD appliance	The collection of OS settings, and AccAD-specific information, for an AccAD instance running on that OS.
AccAD CLI	The textual command line interface (CLI) utility available for the administration and configuration of Accelerated Application Delivery for SAP NetWeaver.
AccAD Repository	The AccAD engine instance that resides in the data center and holds all auditing and accounting information, as well as the delivery policy.
AccAD tunnel	The logical communication between CFE and SFE. The tunnel is generated over a set of Internet connections over WAN, which may be TCP or TLS/SSL, if security is required.
appliance definition file (ADF)	A single XML file that holds the local configuration of an appliance. This file is usually defined in the repository, exported to an XML file, and then imported to a newly installed appliance, in which it is configured.
application delivery (AD)	A solution for providing access to enterprise applications from remote locations. For brevity the abbreviation AD is used often throughout this document.
application delivery engine (AccAD engine)	The core application delivery software, deployed at the data center and at each remote office.
application server	A server at a data center that runs applications and services that may be accessed by local and remote users.
application service	An application resource, such as an enterprise portal, that is requested by users. AccAD identifies application services by means of a host and port combination.
CFE – Client Front End	The AccAD engine instance that resides in the remote office.
data center	A central enterprise facility that hosts the applications, data, or services of an organization.

delivery policy	A set of rules that defines the availability of an application service in a remote office and the delivery optimization parameters. The delivery policy determines which application service is delivered to which application delivery engine.
remote office	Any remote enterprise location from which users need to access applications, data, or services that are physically located at a data center.
service type	A collection of parameters that define delivery optimization for different application services.
SFE - Server Front End	The AccAD engine instance that resides in the data center.

2. Preparing for Installation

This section guides you through the preparations required before implementing AccAD in your system landscape. It covers hardware and software requirements, as well as the collection of data you need before running the installation.

2.1 Hardware and Software Requirements

Host	AccAD Windows client is installed on any host that complies with Microsoft requirements for your version of Windows
Memory	Minimum of 512 MB RAM
Hard Disk Space	Minimum of 200 MB free space
Operating System	Windows 7, Windows XP, Windows server 2003

2.2 AccAD Environment

Before installing the client, you already have an AccAD data center, with an installed and configured repository and an installed and configured SFE; and that the delivery policy in the repository is already configured for the client (CFE) that you are about to install.

2.3 Defining Your Installation Type

You can choose to run the Windows client in either one of the following modes:

- Single User – The AccAD client only services the host on which it is being run.
- Small Office – The AccAD client can support up to 100 users.

Installation and configuration are similar for both small office and single user; however, if you are using the client in a small office, more data and further steps are required.

2.4 Preparing for Secure Communication

Usually, communication between the CFE and SFE is Web-based and can be secured using TLS/SSL.

If you choose to use TLS/SSL, you have several options:

- Using the default certificates supplied in the AccAD kit – This is recommended for demo and test purposes only
- Using your own certificates. If you choose this option make sure to prepare the certificate file and password prior to installation.
- Using the AccAD `adf` file – This is the recommended way of securing the tunnel, and is implemented as part the semi-automatic AccAD Client configuration. Make sure to prepare the `adf` file prior to installing. For more details see the section [Semi Automatic Configuration](#).

2.5 Information Required During Installation

You need the following information when installing the AccAD client. We recommend that you obtain the required parameter values and enter them into the following table, for reference, prior to installation.

Parameter	Value
Client ID	(Provided by IT)
Client Name	(Provided by IT)
SFE address	(Provided by IT)
SFE port	(Provided by IT)
For small office installation only	
Network adapter	(Provided by IT)
DNS server	(Provided by IT)
Virtual IP address range	(Provided by IT)
Subnet mask of the Virtual IP address range	(Provided by IT)
Secure Communication Only (using your own certificates)	
Path to certificate file	
Password of certificate file	
Semi Automatic Configuration Only	
adf file	(Provided by system administrator)

3. Installing the AccAD Client

In this section, find instructions on how to install the AccAD client (CFE) on Windows.

1. Download the `msi` file from service.sap.com/swdc.
2. Run the downloaded file.
3. In the Welcome window choose *Next*.
4. In the Select Installation Folder window, select the folder in which you want the AccAD client to be installed and choose *Next*.

Wait for the installation to finish.

5. In the *Installing SAP AccAD* window, choose *Next*.

Configure the client as described in [Configuring the AccAD Client](#).

4. Configuring the AccAD Client

This section describes how to configure the AccAD client (CFE) on Windows. Perform the configuration using the AccAD CLI or the AccAD Administrator. For more information about these utilities, see the latest version of the installation guide for Linux, Accelerated Application Delivery for SAP NetWeaver.

4.1 Accessing the AccAD Administrator

Access the AccAD Administrator in one of the following ways:

- Go to *Start* → *Programs* → *SAP AccAD* → *Web UI*.
- Navigate to the URL `http://127.0.0.1:7443`.

4.2 Accessing the CLI Using Telnet

1. On the CFE machine, in the Windows main menu, go to *Start* → *Run* and in the text box type `cmd`.
2. At the prompt, type the command `telnet localhost`.

4.3 Configuring the AccAd Client Manually

Follow the instructions in the Linux guide for manual engine configuration, using the information collected in the section Collecting Required Installation Information.

Note

Network information and the virtual IP range are only relevant if you are configuring the client in small office mode.

4.4 Configuring the AccAd Client Semi-Automatically

To configure the AccAD Client semi-automatically, you need an `adf` file containing client details and certificates. To receive this file, contact your system administrator.

If you are installing the client in small office mode, supply the following details about the virtual IP range of the machine:

- Start IP (beginning of range)
- Last IP (end of range)
- Subnet mask

Once you have the `adf` file, you can start the configuration process as follows:

1. Connect to the CLI as explained in [Accessing the AccAD CLI](#).
2. Import the `adf` file using the command `import-adf <URL to adf file>`
3. Apply and save the configuration using `write-memory` and `apply-configuration`.

Alternatively, follow the instructions for semi-automatic configuration using the AccAD Administrator, as described in the installation guide for Linux.

4.5 Restarting the AccAD Client

If you make configuration changes that require restarting the client, do as follows:

1. Open the control screen by going to *Start* → *Programs* → *SAP AccAD* → *Control*.
2. In the control screen opens, choose *Restart*.

5. Configuring the Client Workstation to Work with AccAD

This section is only relevant if the AccAD client is installed in small office mode, and workstations at the client must work with it.

After setting up the AD link between the remote office and the data center, you need to redirect the workstations, which currently access the application server directly, to use the AD link as their means of transport.

Choose from the following two methods, the first is suitable for workstations running the Windows OS, and the second can be used for either Linux/Windows workstations.

- Configure DNS manipulation using the `etc/hosts` file – Suitable for workstations running on Windows OS
- Configure a DNS proxy method – Can be used for workstations running on either Linux or Windows.

5.1 Configuring DNS Manipulation Using the `etc/hosts` File

Redirection is enabled by adding entries to the `hosts` file, which resolves the application server's DNS names to the local AD virtual server's IP addresses.

First you need to determine the address mapping between the application server and the virtual server, that is, the virtual IP address on the CFE representing a specific server.

Checking the DNS proxy:

1. In the Windows main menu on the CFE machine, go to *Start* → *Programs* → *SAP AccAD* → *Control*.
2. Enter the *DNS List*.
A list of services and the virtual IPs representing them will appear.

Configuring mapping information statically in each workstation:

1. On the user workstation, open the `hosts` file (for Windows XP) by navigating in Microsoft Windows Explorer to `c:\WINDOWS\system32\drivers\etc\hosts`, or by entering the following command in the *Start* → *Run* command box:

```
notepad c:\WINDOWS\system32\drivers\etc\hosts
```

2. For each server, add a line defining the DNS resolution:
 - At the end of the `hosts` file, add the entry:
`<virtual IP address> <DNS name of application server>`
 For example: `192.168.100.51 iltlvh74.tlv.sap.corp`

You can check if the setup is correct by:

- using ping:
 - i. Run the following in a command window:
`ping <name of server>`
 For example: `ping iltlvh74.tlv.sap.corp`

- ii. Verify that the ping to the server succeeded.
 - iii. Verify that the server's DNS name has been resolved to the correct virtual address.
- o Using telnet:
 - i. Run the following in a command window:

```
telnet <name of server> <service port>
```

For example: `telnet iltlvh74.tlv.sap.corp 50000`
 - ii. Verify that telnet does not exit immediately. This indicates that the virtual server is listening on the port.

5.2 Configuring a DNS Proxy Method

When the CFE is configured as the DNS server, any of the CFE IP addresses can be used for the DNS server settings on the client-side workstation.

5.2.1 Configuring the DNS Server of a Windows Machine

Defining the CFE as the primary DNS

1. On Windows Vista versions and higher, in the Control Panel, go to *Network Internet* → *Network and Sharing Center* → *Change adapter settings* (on the left) → *Local Area Connection*.

In lower Windows versions, go to *Start* → *Settings* → *Network Connections* → *Local Area Connection*.
2. In the context menu of *Local Area Connection*, choose *Properties*.
3. Select *Internet Protocol (TCP/IP)* and choose *Properties*.
4. In the *General* tab, select *Use the following DNS server addresses* and enter the main IP address of the CFE machine.

Refreshing the workstation DNS proxy

In Microsoft Windows, the DNS proxy caches DNS requests. To prevent delays in DNS modification execution, you must flush the cache of the DNS proxy as follows:

1. Open the command line (**cmd**).
2. Type: `ipconfig /flushdns`.

Note

Use this command after each update to the delivery policy or after stopping/starting the AccAD Delivery Service on the CFE.

5.2.2 Configuring AccAD as DNS on a Linux Machine

1. Using an editor application, access the file: `/etc/resolv.conf`
2. Add the following line:

```
nameserver <CFE machine IP>
```
3. Save and exit.

5.2.3 Ensuring Automatic Failover in DNS Proxy Mode

To ensure automatic failover, you need to configure the secondary DNS server of the workstation to the same values as those of the primary DNS server. This way, when the AccAD DNS proxy service is down for any reason, an automatic failover to direct access through the DNS server will take place.

When AccAD is up and running, the redirection resumes within 30 minutes (according to the expiration time you defined in the workstation registry).

If AccAD is running on Windows, you must flush the DNS proxy as explained in [Configuring the DNS Server of a Windows Machine](#).

6. Monitoring the Application Delivery Engine

Once AccAD is up and running, you can monitor it using the AD Monitor.

6.1 Using the Application Delivery Monitor

This section describes how to monitor application delivery activities.

The Application Delivery Monitor tracks online link activity on both the uplink and the downlink, including comparative graphs depicting real compressed volume against the uncompressed data volumes, as seen by the client and server end points.

The monitor can also help detect that traffic is flowing via the application delivery link setup between the CFE and the SFE.

Note

The monitor does **not** show traffic that goes directly to the data center without going through the application delivery link

6.1.1 Configuring the AD Monitor

1. Run the AD Monitor from the Windows main menu, *Start* → *Programs* → *SAP AccAD* → *Bandwidth Monitor*.
2. Choose *Set*.
A screen displaying a *Port* with the default value 1600 appears.
3. Choose *OK* to keep the default value.
4. Enter the IP address of an AccAD engine to monitor and the port on which it is listening for Bandwidth Monitor connections (1600 is the default).

Note

You can leave the IP field empty to monitor every existing AccAD link that includes your workstation.

5. Choose *OK* and then *Play*.
After several seconds the relevant links appear as rows in the table view and the monitoring of them begins.

7. Verifying AccAD Functionality

This section provides you with a minimal operation test. You can run it when installation and configuration are finished to verify that AccAD is operational.

7.1 Getting Control Information

To get the AccAD control status and data, access the AccAD control and the AccAD Administrator.

Using AccAD Control

1. In Windows main menu, go to *Start* → *Programs* → *SAP AccAD* → *Web UI*.
The *Cockpit* tab show all current operational links.
2. In Windows main menu, go to *Start* → *Programs* → *SAP AccAD* → *Control*.
3. To get the status of all processes in AccAD, select *Process Info*.

7.2 Testing Traffic

This test verifies that the delivered services flow via AccAD.

1. Open a browser and access the application server of the service delivered using the regular URL.

Note

If you are using TLS/SSL termination, use the HTTPS prefix in the URL.

If the port is not the default TLS/SSL port (443), edit the port number explicitly.

Example:

```
https://server21.abc.sap.corp:1443/irj/portal
```

2. Perform a number of actions and then close the browser.
3. Watch the traffic using one of the following tools:
 - In the AD Monitor, you can see the traffic volume.
 - In the *Traffic History* tab, in the AccAD Administrator, you can see the record.

Note

Traffic history records only appear a few minutes after closing the session.

8. Uninstalling the AccAD Client

You can uninstall the AccAD client from the Windows program removal utility that you access from the Windows Control Panel.

Find SAP AccAD and remove.

9. Additional Information

This section contains information that may be useful when installing and maintaining Accelerated Application Delivery for SAP NetWeaver.

9.1 Restarting the AD Engine

To restart the Windows Client, you need to access the AccAD control.

1. In the Windows main menu, go to *Start* → *Programs* → *SAP AccAD* → *Control*
2. Choose *Restart*.

9.2 Clearing the Cache Persistency

You can erase the HTTP cache persistency when the engine is down. To clear the cache in the Windows Client:

1. From the `cmd` window, access the directory `local\bin` from the folder on which you installed AccAD (for example, `C:\sap\AccAD\usr\local\bin\`).
2. Run the command `ADoWct1.exe clean-cache`.

9.3 Upgrading the AD Engine

There is no automated upgrade procedure for the AccAD Windows Client. However, you can upgrade it manually as follows:

1. Access the AccAD Administrator and go to the *Local Configuration* tab.
2. Choose *Export* and save the `adf` file.
3. Uninstall the engine, as described in [Uninstalling the AccAD Client](#).
4. Install the new version, as described in [Installing the AccAD Client](#).
5. Configure the AccAD client, as described in [Configuring the AccAd Client Semi-Automatically](#), using the `adf` file you saved.

Important

In SAP NetWeaver AccAD 2.1, the CLI and the AccAD Administrator were not available. If you are upgrading from 2.1, follow only steps 4 and 5, and perform the configuration manually after installing the new version.