

TIBCO ActiveMatrix® Adapter Framework Administration

*Software Release 1.3.1
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<https://docs.tibco.com>

Product-Specific Documentation

Documentation for TIBCO products is not bundled with the software. Instead, it is available on the TIBCO Documentation site. To directly access documentation for this product, double-click the following file:

`TIBCO_HOME/release_notes/TIB_adapteruipack_version_docinfo.html`

where `TIBCO_HOME` is the top-level directory in which TIBCO products are installed. On Windows, the default `TIBCO_HOME` is `C:\Program Files\tibco`. On UNIX systems, the default `TIBCO_HOME` is `/opt/tibco`.

The following documents for this product can be found in the TIBCO Documentation site:

- *TIBCO ActiveMatrix Adapter Framework Administration*
- *TIBCO ActiveMatrix Adapter Framework Reference*
- *TIBCO ActiveMatrix Adapter Framework Installation*
- *TIBCO ActiveMatrix Adapter Framework Release Notes*

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Introduction to Adapter Administration

TIBCO ActiveMatrix Adapter® Framework provides a set of Adapter administration utilities, which you can use to deploy and monitor TIBCO adapters at run time.

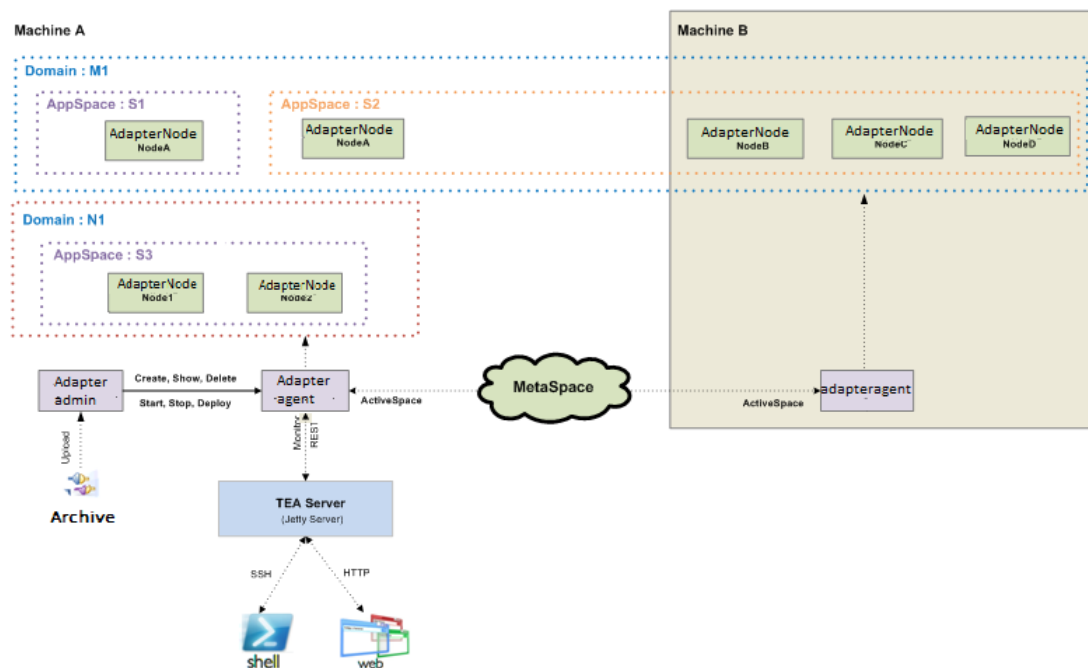
TIBCO adapters bridge custom applications, databases, and other technologies in the enterprise information flow, regardless of their data formats or communication protocols.

At design time, you can configure a TIBCO adapter to make an application part of TIBCO infrastructure without any changes to the application. After configuring the adapter in TIBCO Business Studio, you can use [adapter administration utilities](#) to deploy the adapter and monitor the adapter at run time. Additionally, with TIBCO® Enterprise Administrator, you can also view and monitor adapters in the Admin UI provided by TIBCO Enterprise Administrator (TEA).

The following are key components of the Adapter administration:

- An [application archive](#) is a deployment unit for an adapter application that is generated in TIBCO Business Studio.
- A [domain](#) is a logical group that provides an isolated environment for applications and their resources. A domain can contain one or more app spaces.
- An [app space](#) is a group of one or more adapter nodes that are runtime entities hosting adapter applications. An app space can contain one or more adapter nodes.
- An [adapter node](#) is a runtime entity that hosts adapter applications.
- An [adapter agent](#) is a daemon process that is used to provision adapter nodes and applications, perform administration commands, and synchronize data from the datastore.

The following figure illustrates how the components interact with each other when adapteragent is configured using ActiveSpaces as the persistence type:



Domain M1 spans two machines, Machine A and Machine B, and contains two AppSpaces, S1 and S2. AppSpace 2 spans on both machines. Domain N1 is on Machine N1 only and contains one AppSpace, S3. The adapter agent on Machine A is configured to interact with the adapter agent on Machine B through the datastore.

The adapter agent on Machine A is registered with a TEA server to use the Admin UI that runs in TIBCO Enterprise Administrator. If the registered adapter agent becomes unavailable, the connection between the TEA server and the agent network is automatically recovered. The adapter agent on Machine B registers with the TEA server automatically. The administration architecture ensures that no single point of failure brings an application down.

Adapter Administration Components

Similarly to the BusinessWorks administration, the Adapter administration also includes application archive files, domains, app spaces, and other runtime entities.

The key Adapter administration components are as follows:

- [Application Archive](#)
- [Domain](#)
- [App Space](#)
- [Adapter Node](#)
- [Adapter Agent](#)

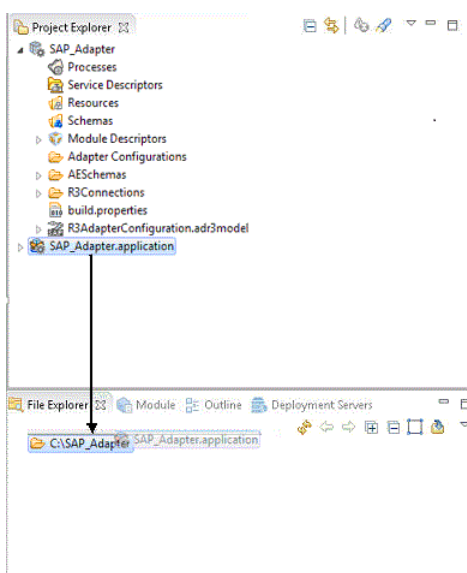
Application Archive

An *application archive* is a deployment unit for an adapter application that is generated in TIBCO Business Studio. Before deploying an adapter application, you must generate an application archive.

An *adapter application* is a BusinessWorks application that contains an application module and one or more adapter configurations. Each adapter configuration is an adapter instance configured with the corresponding adapter services.

The generated application archive is an enterprise archive (EAR) file named as *application_version.ear*. It is the only artifact that is handed from the design phase to the runtime phase, which contains all the bundles and metadata information that are required to deploy the adapter application.

You can create an application archive either by dragging an adapter application from the Project Explorer view to the File Explorer view, or right-clicking the adapter application and clicking **Create Enterprise Archive (EAR)**.



Domain

A domain is a logical group that provides an isolated environment for applications and their resources.

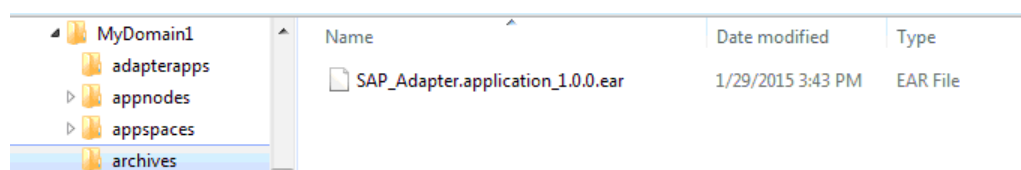
A domain contains multiple runtime entities such as app spaces and adapter nodes, and can span more than one machine and share a machine with other domains, that is, one machine can contain more than one domain. Applications in one domain are separated from applications in the other domains.

A domain is the first entity that you must create during the deployment. Runtime entities, such as app spaces and adapter nodes, can only exist within a domain. After creating a domain, you can upload an application archive to the domain. The adapter application contained in the application archive then can be deployed to app space for execution.

A domain manifests as a folder. The folder contains child folders, **appspaces** and **appnodes**, to store data regarding the app space and adapter nodes, and also contains an **archives** folder to store application archive files.

You can find the created domain folder in the `TIBCO_HOME\afx\domains` directory.

For more details, see [Managing Domains](#).

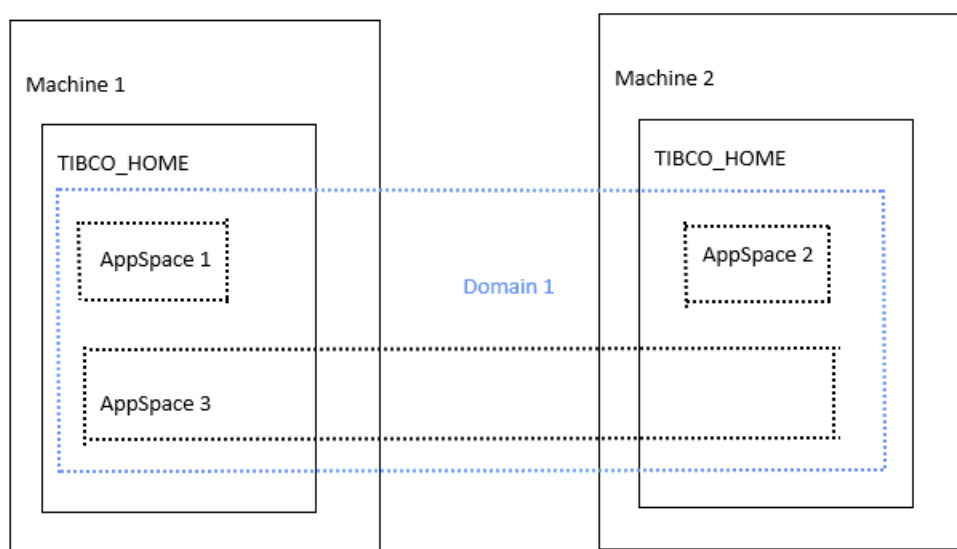


App Space

An app space is a collection of one or more adapter nodes.

An adapter node is a logical entity that hosts adapter applications. When you deploy an adapter application to an app space, the application is deployed to all the adapter nodes that are part of the same app space. App spaces can span multiple physical machines across the network.

For more details, see [Managing App Spaces](#).



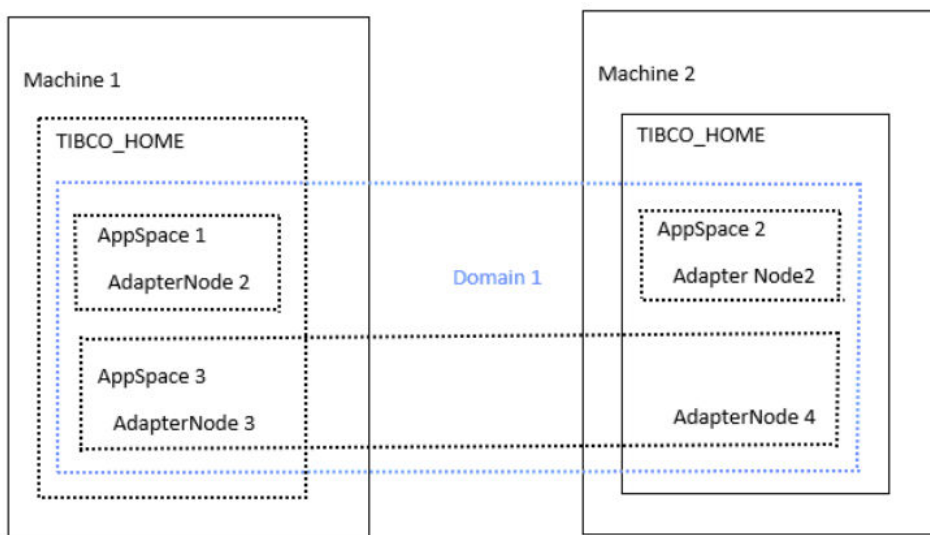
Adapter Node

An adapter node is a runtime entity that hosts adapter applications for execution.

An app space contains one or more adapter nodes. If you deploy an application to an app space, the adapter application is automatically deployed to the adapter nodes that are contained in the app space. When adapter nodes are added to an app space, more processing capacity becomes available for the deployed application to handle a higher load of requests.

If you stop an adapter node, all the adapter applications running on the adapter node are stopped. However, if you start an adapter node, the deployed adapter application might not be started. It depends on the aggregated state of an adapter application. If the aggregated state is computed to start, that is, the adapter application is running on minimum number of the adapter nodes that it is required to run on, the adapter application is started when you start the adapter node; if the aggregated state is computed to stop, the adapter application is not started when you start the adapter node.

For more details, see [Managing Adapter Nodes](#).



Adapter Agent

An adapter agent is a daemon process that is used to provision adapter nodes and applications, perform administration commands, and synchronize data from the datastore.

Each installation corresponds to an adapter agent. The adapter agent can communicate between agents located on different machines. Multiple adapter agents can communicate by using TIBCO ActiveSpaces for data persistence and communication transport.



To use an external relational database for persistence and TIBCO Enterprise Message Service (EMS) for transport among adapteragents, see [adapteragent Configuration for using Database/EMS](#).

If you want to use the Admin UI provided by TIBCO Enterprise Administrator to view and monitor adapter applications, you must register an adapter agent with a TEA server.

For more details, see [Managing Adapter Agents](#).

Adapter Administration Utilities

TIBCO ActiveMatrix Adapter Framework provides a set of utilities to manage and monitor deployed adapter applications.

You can find the following utilities in the *TIBCO_HOME\afx\version_number\bin* directory:

Utilities	Description
adapteradmin	<p>Provides a command-line interface to manage domains, app spaces, adapter nodes, and adapter applications.</p> <p>The adapteradmin utility contains a set of commands. You can execute each command respectively with the provided syntax, or launch the utility as a shell and execute the commands in a sequence.</p> <p>The adapteradmin utility can run in a collaborative mode with the adapter agents on other machines.</p>
adapteragent	<p>Provides administration controls for runtime adapters.</p> <p>You can register an adapter agent with a TEA server to manage and monitor adapter applications using the Admin UI.</p> <p>The adapter agent must be started before using the adapteradmin utility.</p>
tibhawkagent	<p>Provides monitoring controls for runtime adapters.</p> <p>The TIBCO Hawk® agent must be started before starting the adapter agent.</p>

Differences from BusinessWorks Administration

The deployment, administration, and life-cycle management of an adapter application is closely patterned on similar functionality provided by TIBCO ActiveMatrix BusinessWorks™, but there are some differences between the Adapter administration and BusinessWorks administration.

If an application is configured with one or more adapter configurations and BusinessWorks processes, you have to use the TIBCO ActiveMatrix Adapter Framework **administration utilities** to deploy and manage adapters, and use the TIBCO ActiveMatrix BusinessWorks administration utilities to deploy and manage the BusinessWorks processes of the application at the same time.

The following are major differences between the Adapter administration and the BusinessWorks administration:

- Use of the **tibhawkagent** utility to provide monitoring and control of runtime adapters.
- Use of the **adapteragent** utility to provide administration controls for runtime adapters, instead of the **bwagent** utility.

The BusinessWorks agent can run in local and enterprise modes, but the adapter agent can only run in enterprise mode.

- Use of the **adapteradmin** utility as a command-line interface to manage the core entities, domains, AppSpaces, Adapter nodes, EAR files and applications for adapter configurations, instead of the **bwadmin** utility.
- Use of AdapterNodes at the node level, instead of AppNodes.
- Adapters and adapter instances.

An adapter represents a configuration created for a specific type of adapter in the application module (same as Eclipse project). An application module can contain multiple adapter configurations. An adapter instance is a running instance of one of such configurations on a specific adapter node of an app space.

- Differences between the applications at run time.

At design time, adapter applications and BusinessWorks applications have no major differences. If a BusinessWorks application is configured with an adapter configuration, it is also an adapter application. When an EAR file is generated, artifacts of both technology types, BusinessWorks and Adapters, are packaged inside it.

However, there is a major difference at run time. When an EAR file is deployed to an adapter agent, it creates an adapter application; when it is deployed to a BusinessWorks agent, it creates a BusinessWorks application.

At design time, the palette that comes with the TIBCO ActiveMatrix Adapter Framework installation contains a set of adapter activities, which can be used to communicate with other process activities and adapters. A process containing adapter activities is deployed on **bwadmin**, not on **adapteradmin**.

Administrator and Agent

adapteradmin and adapteragent are used to create, manage, and monitor domains, AppSpaces, AdapterNodes, archives, and applications.

Runtime entities are created in the local file system in the `TIBCO_HOME\afx\domains` directory and the corresponding information can be viewed in the Oracle database.

For information about the set of utilities in TIBCO ActiveMatrix Adapter Framework, see [Adapter Administration Utilities](#).

adapteradmin

adapteradmin provides a command line console that can be used in enterprise mode to create and manage domains, AppSpaces, AdapterNodes, archives, and applications. Collectively, the entities provide the logical and physical structure for the runtime environment.

adapteradmin provides the following features:

- Interactive shell
- Batch/silent mode by passing a command file as argument
- Ability to execute commands locally as well as remotely
- Ability to address an adapteragent group
- Simple and intuitive command structures
- Nested commands
- Command completion

adapteradmin Command Modes

A full range of adapteradmin commands is available. A command can be executed stand-alone from the command line or from the adapteradmin console.

Commands can be executed in the following modes:

- **Interactive Mode:** Useful for exploration. Commands are executed from the adapteradmin shell. Any number of commands can be executed in a sequence.
- **Command Line:** Useful for execution of single commands. Commands are executed stand-alone from the command line with the provided syntax.
- **Batch Mode:** Useful for execution of repetitive commands.

To get help on a command, including syntax information, type **help** followed by the command name, from either interactive mode or the command line, for example:

```
adapteradmin help
adapteradmin help create
adapteradmin help registerteagent
```

Interactive Mode

Interactive mode is used for exploring runtime entities. Enter interactive mode by typing **adapteradmin** at the command line. To view a list of available commands, press **tab**.

The **cd** command sets the runtime entity context so you can omit runtime entity options for commands like **create**, **delete**, **start**, or **stop**.

Command Line

adapteradmin commands can be issued from the command line in the format: **adapteradmin** **[options]** **command** **<arguments>**

To see the list of all adapteradmin commands, type **adapteradmin help** at the command line.

The following options can be specified for adapteradmin at the command line:

adapteradmin Command Options

Option	Description	Example
-b, -batch	Reads a series of commands from the standard input.	adapteradmin -batch adapteradmin get admin.mode
-config	Applies the configuration in the specified file to the server instance.	adapteradmin -config -d myDomain -a myAppSpace -cf file_path/config.ini
-f <file> [, <file2> , ...]	Reads commands from the specified file or from the comma-separated list of files. The specified file can contain one command or multiple commands. Exits after command execution is completed.	adapteradmin -f backupMyAppNode.cmd
-l, -login <arg>	Specifies the login ID to use for the session.	Given the following command: adapteradmin -l User1 adapteradmin in interactive mode displays: adapteradmin[User1]>
-logconfig <file>	Uses the specified file for logback configuration.	adapteradmin -logconfig mylogback.xml
-x, -xtrace	Echoes the command to the terminal.	Given the following command adapteradmin -x create domain MyDomain1 the following output is issued: TIBCO Adapter Framework version 1.3.1, build V5, 2017-03-01 + create domain MyDomain1

For information on adapteradmin commands, see [Adapter Administration Command-Line Utility](#).

Batch Mode

A command file can be passed to adapteradmin at the command line with the **-f** option. The batch file should contain all required inputs. An example of a command file is a backup created with the **backup** command.

adapteragent

An adapteragent is a daemon process that is responsible for provisioning AdapterNodes and applications, performing administration commands, and synchronizing data from the datastore with the local file system. There is one adapteragent for each installation.

adapteragent Group

The adapteragent enables communication between agents located on different machines. When multiple adapteragents are configured to communicate with each other using a common datastore, they

form an adapteragent group. adapteragents can communicate by using an external database, Oracle, for data persistence and TIBCO Enterprise Message Service for communication transport.

adapteragent Access

There are multiple ways to access the adapteragent: adapteradmin, the Admin UI, or the REST API.

- **adapteradmin:** In enterprise mode, adapteradmin sends commands to the adapteragent. The adapteragent dispatches the command to the targeted agent. For information on the commands, see Adapter [Administration Command-Line Utility](#).
- **Admin UI:** When the adapteragent is registered with the TEA server, the Admin UI can be used to create and manage runtime entities.
- **REST API:** View the adapteragent REST API in the Swagger UI.

adapteragent Commands and Options

adapteragent supports its own set of commands. Commands are issued from the command line in the format: **adapteragent [options] command <arguments> .**

The following commands can be specified for adapteragent:

adapteragent Commands

Command	Description
apiserver	Starts the apiserver that hosts the REST API in the Swagger UI. Open a browser and go to the following URL: <code>http://localhost:8777</code>
startagent	Starts the adapteragent. This is the same as the default command when no command is given.
stop	Stops the adapteragent gracefully.

The following options can be specified for adapteragent:

adapteragent Command Options

Option	Description	Example
-config	Applies the configuration in the specified file to the server instance.	adapteragent -config adapteragent.ini
-logconfig <file>	Uses the specified file for logback configuration.	adapteragent -logconfig mylogback.xml
-x, -xtrace	Echoes the command to the terminal.	Given adapteragent -x , the text <code>+startagent</code> is echoed to the console when the agent starts.

adapteragent Configuration

The adapteragent can be configured for a multi-agent, multi-machine environment.

The adapteragent is configured by editing the settings in the `adapteragent.ini` file in the `TIBCO_HOME/afx/version/config` folder. The settings in this file are used by both adapteragent and adapteradmin.

adapteragent Configuration for using Database/EMS

The adapteragent can be configured to use an external relational database for persistence and TIBCO Enterprise Message Service (EMS) for transport among adapteragents. Oracle 12c is the default database.

The following are important aspects of the adapteragent configuration for using database/EMS:

- [adapteragent Properties for using Database/EMS](#)
- [Installing database/EMS](#)
- [Enabling database/EMS](#)



You need to regularly back up domain data.

adapteragent Properties for using Database/EMS


For a multi-agent, multi-machine environment using an external database, Oracle, and TIBCO Enterprise Message Service, the properties in the `adapteragent.ini` file are important.



The Network (group) name is defined using the property `admin.networkName`. For example, `networkName=ADFNework`.

adapteragent Properties for Using Database/EMS

Property Name	Description
<code>admin.technology.dbems.db.driver</code>	The Database provider. Example: <code>dbdriver=oracle.jdbc.OracleDriver</code>
<code>admin.technology.dbems.db.connectionURL</code>	The Database URL. The Database URL is the host, the port, and the ID of the port. Example: <code>dbconnectionURL=jdbc:oracle:thin:@<host>:<port>:<sid></code>
<code>admin.technology.dbems.db.userName=<user></code>	The Database user. Example: <code>dbuserName=<user></code>
<code>admin.technology.dbems.db.password</code>	The Database user password. You can obfuscate or encrypt the password if required. To obfuscate the password, see the Note provided under step 2 in "Enabling Database/EMS". Example: <code>dbpassword=<password></code>

Property Name	Description
<code>admin.technology.dbems.ems.ServerUrl</code>	The EMS server URL. Example: <code>emsServerUrl=tcp://localhost:7222</code>
<code>admin.technology.dbems.ems.UserName</code>	The EMS user. If a value is not specified, then the EMS user would default to admin user. Example: <code>emsUserName=admin</code>
<code>admin.technology.dbems.ems.Password</code>	The EMS user password. If a value is not specified, then the password would default to blank. You can obfuscate or encrypt the password if required. To obfuscate the password, see the Note provided under step 2 in "Enabling Database/EMS". Example: <code>emsPassword=<password></code>
<code>admin.technology.dbems.ems.requestQueueName</code>	The EMS member queue. The queue name is unique and is the adapteragent machine name preceded by "afx". Example: <code>emsrequestQueueName=afx.admin.operations.queue.%HOSTNAME%</code>
<code>admin.technology.technology.dbems.ems.qin.EMSPrefix</code>	The EMS Adapter Agent Qin group name prefix. This property is optional and the default value is "EMSGMS". Example: <code>emsqinEMSPrefix=EMSGMS</code>
<code>admin.technology.dbems.ems.requestTimeout</code>	The EMS request timeout to agent (ms). The default value is 60000 milliseconds.  To avoid timeouts from the Enterprise Message Service, increase and set a suitable value as required. Example: <code>emsrequestTimeout=60000</code>
<code>admin.technology.dbems.ems.reconnection.interval</code>	The EMS reconnection interval (ms). If a value is not specified, then the reconnection interval would default to 10000. Example: <code>emsreconnectioninterval=10000</code>
<code>admin.technology.dbems.ems.ssl.trust.identity</code>	The EMS SSL connection trusted identity. It consists of the certificate, private key and optionally extra issuer certificates can be included into a single data block using PKCS12, KeyStore or Entrust Store encodings. Example: <code>ssltrustidentity={EMS_HOME}/samples/certs/client_identity.p12</code>

Property Name	Description
<code>admin.technology.dbems.ems.ssl.trust.cert.location</code>	<p>The location of the EMS SSL connection trusted root certificate. The set of Trusted Certificates represents all trusted issuers of the server certificate. It must be specified by the client application unless the host certificate verification is completely disabled.</p> <p>Example: <code>ssltrustcertlocation={EMS_HOME}/samples/certs/server_root.cert.pem</code></p>
<code>admin.technology.dbems.ems.ssl.trust.password</code>	<p>The EMS SSL connection trust password. This property is required if the JMS server protocol is ssl.</p> <p>You can obfuscate or encrypt the password if required. To obfuscate the password, see the Note provided under step 2 in "Enabling Database/EMS".</p> <p>Example: <code>ssltrustpassword=<password></code></p>
<code>admin.technology.dbems.ems.ssl.disable.verify.host.name</code>	<p>The EMS SSL host name verification. The trusted certificate commonname must match the ems server hostname if set to false.</p> <p>Example: <code>ssldisableverifyhostname=false</code></p>
<code>admin.technology.dbems.ems.ssl.disable.verify.host</code>	<p>The EMS SSL host verification. The client and server certificates must match if set to false.</p> <p>Example: <code>ssldisableverifyhost=false</code></p>



For SSL, the usage of TIBCO Policy Editor is not supported.

Installing Database/EMS

Both the Oracle Database and the TIBCO Enterprise Messaging Server must be installed before they can be configured for use with adapteragent. For the Database/EMS version to install, see the Readme document.

Procedure

1. Install the TIBCO Enterprise Messaging Server and start the server.
2. Install the Oracle Database.
 - a) Download and install the Oracle Database.
 - b) Perform the server configuration by following the prompts in the Oracle Configuration wizard.
 - c) Accept the default port value 1521, or enter your own port number.
 - d) Download the following JDBC driver connector JAR files (ojdbc6.jar) to the `TIBCO_HOME/afx/version/system/lib` folder.



The `TIBCO_HOME/afx/version/config/dbscripts/oracle/` folder contains two scripts namely `oracle_create` and `oracle_drop`. These scripts help you to administer the database in an efficient manner. The `oracle_create` script indicates what you can expect in the database and `oracle_drop` script allows you to drop a table if you have a problem with the database. You should back up the data before using the `oracle_drop` script.

Enabling Database/EMS

After you have installed TIBCO ActiveMatrix Adapter Framework, you have to enable the Oracle database and the Enterprise Message Service (EMS) for persistence and transport.

Prerequisites

You should have installed the Enterprise Message Server and the Oracle database. For details about the installation, see [Installing Database/EMS](#). Also, you must have the privileges to create and to update a database.

Procedure

1. Create a new database in an Oracle instance.



Do not use the same database as the TIBCO BusinessWorks database.

2. Modify the {TIBCO_HOME}\afx\1.3\config\adapteragent.ini file as shown to enable the Enterprise Message Service and the database for persistence and transport. Also SSL support is now provided, modify the settings as required.



If you want to obfuscate the password of the database, the Enterprise Message Service, or the Enterprise Message Service SSL connection, use the **bwobfuscator** command provided by BW from the command line. Then enter the generated encrypted text as the password.



To avoid timeouts from the Enterprise Message Service, increase and set a suitable value as required in **admin.technology.dbems.ems.requestTimeout**(Default is 60000 ms).

```
admin.persistence.type=dbems

admin.technology.dbems.ems.ServerUrl=tcp://localhost:7222
admin.technology.dbems.ems.UserName=<UserName>
admin.technology.dbems.ems.Password=<Password>
requestQueueName=afx.admin.operations.queue.<machinename>
admin.technology.technology.dbems.ems.qin.EMSPrefix=MSGMS
admin.technology.dbems.ems.requestTimeout=60000
admin.technology.dbems.ems.reconnection.interval=30000

admin.technology.dbems.ems.ssl.trust.identity={EMS_HOME}/samples/certs/
client_identity.p12
admin.technology.dbems.ems.ssl.trust.cert.location={EMS_HOME}/samples/certs/
server_root.cert.pem
admin.technology.dbems.ems.ssl.trust.password=<password>
admin.technology.dbems.ems.ssl.disable.verify.host.name=true
#admin.technology.dbems.ems.ssl.disable.verify.host=false

admin.technology.dbems.db.driver=oracle.jdbc.OracleDriver
admin.technology.dbems.db.connectionURL=jdbc:oracle:thin:@localhost:1521:adfauto
admin.technology.dbems.db.userName=<userName>
admin.technology.dbems.db.password=<password>
```

3. Run **tibhawkagent.exe** present in {TIBCO_HOME}\afx\1.3\bin from the command line.



Check if **tibhawkagent** is started. Only after **tibhawkagent** is started, **adapteragent** can be started successfully.

4. Run **adapteragent.exe** present in {TIBCO_HOME}\afx\1.3\bin from the command line and check the version and date. For example: TIBCO Adapter Framework version 1.3.1, build V5, 2017-03-01



Do not connect to the adapter agent until the you see the following message on the console: TIBCO-AFX-AGENT-300002: TIBCO ActiveMatrix Adapter Agent started successfully.

5. Run **adapteradmin** from the command line and check the version and date. For example: TIBCO Adapter Framework version 1.3.1, build V5, 2017-03-01

Creating an Agent Network

This topic shows how to configure adapteragents so that they can be members of the same agent network.

Prerequisites

When using multiple machines, the runtime status of the adapteragents and AppNodes cannot be computed reliably if the machine clocks in the agent network are not in sync with each other. Make sure that the clocks of the machines in the network are synchronized.

Procedure

1. Stop adapteragent.
2. For each adapteragent, open the `adapteragent.ini` file located in `AFX_HOME\config` (Windows) or `$ {AFX_HOME}/config` (Unix).
3. Edit the following parameters in the `adapteragent.ini` file:

Parameter	Property in adapteragent.ini file	Setting
memberName	memberName	The name of the adapteragent in the network. Must be unique for each adapteragent. If it is not unique, the member will not start.
adapteragentNetwork Name	admin.networkName	The name of the network. Must be the same setting for each adapteragent in the network.

4. Restart adapteragent.
Use the **show agents** command to show all discovered adapteragents. Agents in a network can be managed by any other adapteragent.

Getting Started

This tutorial shows how to deploy and start an adapter application by using the **adapteradmin** utility.

In this tutorial, TIBCO ActiveMatrix® Adapter for SAP (TIBCO Business Studio™) is used as an example. If you have created an adapter application, you can start from [generating an application archive](#).


Complete the following tasks to start an adapter application from the Adapter Administration console:

1. [Creating an Adapter Application](#)
2. [Generating an Application Archive](#)
3. [Deploying and Starting an Adapter Application](#)

Creating an Adapter Application

Before deploying, you have to create an adapter application and configure it with an adapter service to enable the data exchange with the application that you want to connect to.


Procedure

1. Start TIBCO Business Studio using one of the following ways:
 - Microsoft Windows: click **Start > All Programs > TIBCO > TIBCO_HOME > TIBCO Business Studio version_number > Studio for Designers**.
 - UNIX: run the TIBCO Business Studio executable file located in the *TIBCO_HOME/studio/version_number/eclipse* directory.
2. On the toolbar, click  to open the New BusinessWorks Application Module wizard.
3. In the Project dialog, enter SAP_Adapter as the project name in the **Project name** field.
4. Clear the **Create empty process** check box. Click **Finish**.
The created SAP_Adapter project and the SAP_Adapter application are displayed in the Project Explorer view.
5. In the Project Explorer view, right-click the SAP_Adapter project and click **New > Other**.
6. In the "Select a wizard" dialog, click **TIBCO Adapters > Adapters for SAP > Adapter Configuration**. Click **Next**.
7. In the "Create new Adapter for SAP Configuration" dialog, use the default settings and click **Finish** to create a SAP adapter configuration.
The created SAP adapter configuration is displayed in the SAP_Adapter project and the Adapter for SAP Configuration editor is displayed in the right panel.
8. In the Project Explorer view, click **Module Properties** and provide values for the required connection fields.
9. Add Publication Service for the created SAP adapter.
See the TIBCO ActiveMatrix Adapter for SAP (TIBCO Business Studio) documentation for more details about how to configure Publication Service.

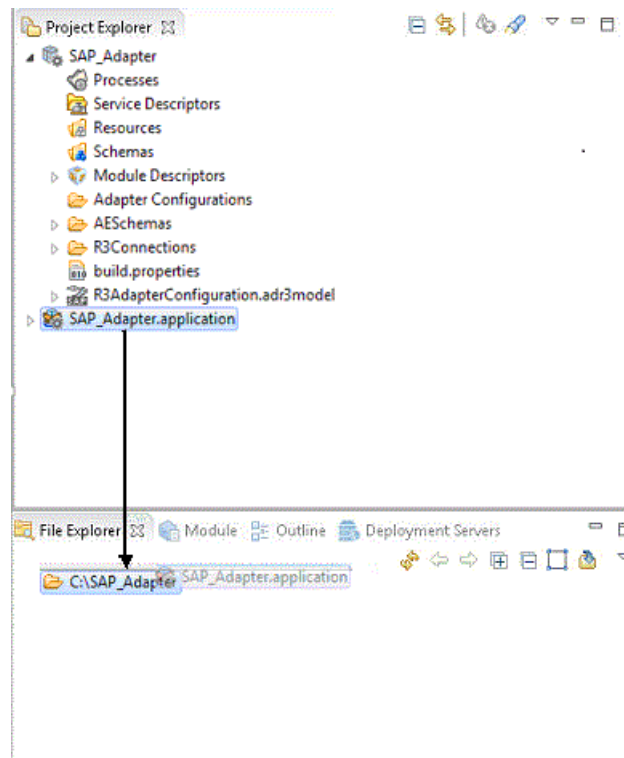
Generating an Application Archive

After creating an adapter application, you have to generate the application archive that contains the application information required for the deployment.

Procedure

1. In the File Explorer view, click  to select the folder where the application archive is generated.
2. In the Project Explorer view, drag the adapter application to the selected folder in the File Explorer view.

The EAR file is generated in the selected folder.



Deploying and Starting an Adapter Application

After generating the application archive, you can use the **adapteradmin** utility to deploy and start the adapter application.

Prerequisites

Before using the **adapteradmin** utility to deploy the adapter application, you have to start the adapter agent and TIBCO Hawk agent:

1. Open two command lines and navigate to the `TIBCO_HOME\afx\version_number\bin` directory.
2. On one command line, enter the following command to start the TIBCO Hawk agent:

```
tibhawkagent
```

3. On the other command line, enter the following command to start the adapter agent:

```
adapteragent
```

Procedure

1. Open a command line and navigate to the folder where the **adapteradmin** utility is located.
By default, it is located in the *TIBCO_HOME\afx\version_number\bin* directory.

2. Optional: Enter the following command to get help information:

```
adapteradmin help
```

3. Enter the following command to start the Adapter Administration console:

```
adapteradmin
```

The Adapter Administration console is started with the following messages:

```
D:\TIBCO_HOME5\afx\1.3\bin>adapteradmin
TIBCO Adapter Framework version 1.3.0, build V11, 2016-02-01
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/D:/TIBCO_HOME5/afx/1.3/lib/logback-
classic-1.0.13.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/D:/TIBCO_HOME5/afx/1.3/system/shared/logback-
classic-1.0.13.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/D:/TIBCO_HOME5/afx/1.3/system/shared/slf4j-
log4j12-1.5.2.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type
[ch.qos.logback.classic.util.ContextSelectorStaticBinder]
TIBCO ActiveMatrix Adapter Administration Console

Hit '<tab>' for a list of available commands
    and 'help command ' for help on a specific command.
Enter 'quit' or Ctrl-D to exit the shell.
adapter[admin]>
```

4. Enter the following command to create a domain:

```
create domain DomainName
```

where:

DomainName

Name of the domain that you want to create.

5. Enter the following command to navigate to the created domain:

```
cd DomainName
```

6. Enter the following command to create an app space in the selected domain:

```
create appspace AppSpaceName
```

where:

AppSpaceName

Name of the app space that you want to create.

7. Enter the following command to navigate to the created app space:

```
cd AppSpaceName
```

8. Enter the following command to create an adapter node in the selected app space:

```
create adapternode AdapterNodeName
```

where:

AdapterNodeName

Name of the adapter node that you want to create.

9. Enter the following command to navigate to the created adapter node:

```
cd AdapterNodeName
```

10. Enter the following command to upload the EAR file of the adapter application that you want to deploy:

```
upload EARFilePath
```

EARFilePath

Absolute path of the EAR file.



On Microsoft Windows, you must use forward slashes (/) in the file path.

11. Enter the following command to deploy the EAR file to the selected adapter node:

```
deploy EARFileName
```

where:

EARFileName

Name of the EAR file that you want to deploy.

12. Enter the following command to start the created adapter node.

```
start adapternode AdapterNodeName
```

13. Enter the following command to start the adapter application deployed in the selected adapter node:

```
start application ApplicationName Version
```

where:

ApplicationName

Name of the adapter application that you want to start.

Version

Version of the adapter application that you want to start.

A message similar to the following one is displayed in the console when the adapter application is started:

```
adapter[admin]> create domain d4
Connected to Adapter Agent
TIBCO-AFX-ADMIN-CLI-300100: Domain [d4] created successfully.

adapter[admin]> cd d4

adapter[admin@d4]> create appspace a4
TIBCO-AFX-ADMIN-CLI-300200: AppSpace [a4] in Domain [d4] created successfully.

adapter[admin@d4]> cd a4

adapter[admin@d4/a4]> create adapternode n4
TIBCO-AFX-ADMIN-CLI-300300: AdapterNode [n4] in AppSpace [a4], Domain [d4]
created successfully.

adapter[admin@domain1/a4]> cd n4

adapter[admin@d4/a4]> upload C:/SAP_Adapter/salesforce_opportunity_to_
sap_orderProject.application_1.0.0.ear
TIBCO-AFX-ADMIN-CLI-300410: The ear file [C:/SAP_Adapter/salesforce_opportunity
_to_sap_orderProject.application_1.0.0.ear] uploaded successfully.

adapter[admin@d4/a4]> deploy salesforce_opportunity_to_sap_orderProject.
application_1.0.0.ear
TIBCO-AFX-ADMIN-CLI-300403: The application [salesforce_opportunity_to
_sap_orderProject.application], version [1.0] deployed successfully.

adapter[admin@domain1/a4/n4]> start adapternode n4
TIBCO-AFX-ADMIN-500556: AdapterNode [n4] in AppSpace [a1] in Domain
```

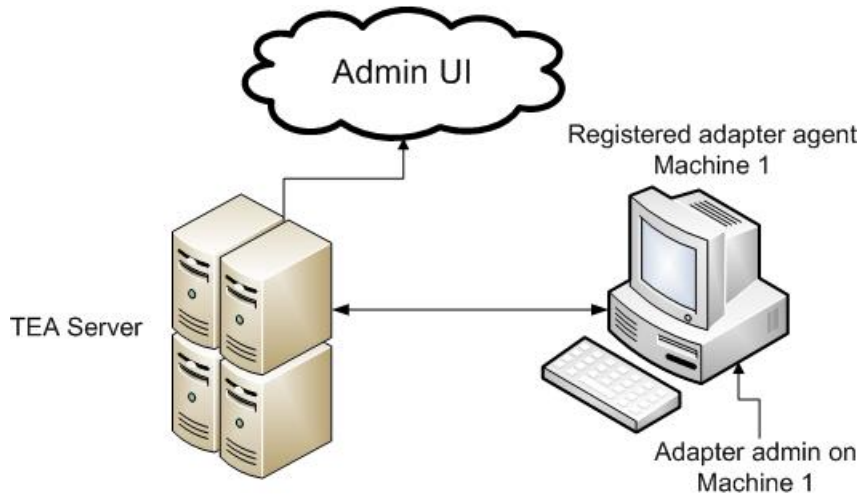
```
[domain1] started successfully.
```

```
adapter[admin@d4/a4]> start application salesforce_opportunity_to_sap_  
orderProject.application 1.0  
TIBCO-AFX-ADMIN-500409: The application [salesforce_opportunity_to_sap_  
orderProject.application], version [1.0], started successfully.
```


Managing Adapter Agents

The adapter agent must be started when using the Adapter administration to view and monitor adapters.

An adapter agent is a daemon process that is used to provision adapter nodes and applications, perform administration commands, and synchronize data from the datastore. In addition to use the **adapteradmin** utility, you can also use the Admin UI to view and monitor adapters, by registering an adapter agent with a TEA Server. See [Registering an Adapter Agent with a TEA Server](#) for details.



An adapter agent is typically part of an agent group. Each agent acts as a communication agent that makes commands distributed through multiple adapter agents simultaneously.

The adapter agent only runs in the enterprise mode. In the enterprise mode, data is synchronized with the administration database that is located in TIBCO ActiveSpaces.

To use an external relational database for persistence and TIBCO Enterprise Message Service (EMS) for transport among adapteragents, see [adapteragent Configuration for using Database/EMS](#).

Starting or Stopping an Adapter Agent

The adapter agent must be running when deploying and managing the adapters in the Adapter Administration console or the Admin UI.

- To start an adapter agent:

On a command line, navigate to the `TIBCO_HOME\afx\version_number\bin` directory and enter `adapteragent`.



The TIBCO Hawk agent must be started before starting an adapter agent:

On a command line, navigate to the `TIBCO_HOME\afx\version_number\bin` directory and enter `tibhawkagent`.

- To stop an adapter agent:

On a command line, navigate to the `TIBCO_HOME\afx\version_number\bin` directory and enter `adapteragent stop`.

Registering an Adapter Agent with a TEA Server

To view and monitor entities in the Admin UI, you must register an adapter agent with a TEA server.

TIBCO ActiveMatrix Adapter Framework is exposed to the TEA server through an adapter agent. After registering the adapter agent, you can start and stop adapter applications in the Admin UI.

Prerequisites

Before registering an adapter agent, you must:

- start the TIBCO Hawk agent:

On a command line, navigate to the *TIBCO_HOME\afx\version_number\bin* directory and enter *tibhawkagent*.

- start the adapter agent that you want to register:

On a command line, navigate to the *TIBCO_HOME\afx\version_number\bin* directory and enter *adapteragent*.

- start the TEA server that you want to register the adapter agent with:

On a command line, navigate to the *TIBCO_HOME\tea\version_number\bin* directory and enter *tea*.

Procedure

1. On a command line, navigate to the *TIBCO_HOME\afx\version_number\bin* directory and enter *adapteradmin* to start the Adapter Administration console.
2. Enter the following command to register the adapter agent:

```
registerteaagent adminURL
```

where:

adminURL

URL of the Admin UI that is returned when starting the TEA server.

A message similar to the following one is displayed:

```
adapter[admin]> registerteaagent http://{host-name}:8777
Connected to Adapter Agent
TIBCO-AFX-ADMIN-CLI-300010: Registered TEA Agent [afx.host-name] with TEA
Server successfully.
```

What to do next

Open a web browser and enter the administration URL, for example, *http://{host-name}:8777*, to open the Admin UI. Provide your user name and password to log on to Admin UI. You can find the registered adapter agent on the Agent Management page:

Agent Management



Agents

[Register new](#)[Reconnect](#)[Unregister](#)

<input type="checkbox"/>	Name 	Product 	Description 	Machine 	Status 
<input type="checkbox"/>	192.168.74.60_9093_afxta (afxta)	Adapters		hyang-PC	Running

- END OF DATA -

Managing Domains

A domain is a logical group of users, machines, and applications that are monitored and managed by the TEA server. You can use the **adapteradmin** utility to create and delete domains.

Prerequisites

Before using the **adapteradmin** utility, you have to start the adapter agent and TIBCO Hawk agent:

1. Open two command lines and navigate to the `TIBCO_HOME\afx\version_number\bin` directory.
2. On one command line, enter the following command to start the TIBCO Hawk agent:

```
tibhawkagent
```

3. On the other command line, enter the following command to start the adapter agent:

```
adapteragent
```

Procedure

1. Open a command line and navigate to the folder where the **adapteradmin** utility is located. By default, it is located in the `TIBCO_HOME\afx\version_number\bin` directory.
2. Enter the following command to start the Adapter Administration console:
`adapteradmin`
3. Enter the following commands to manage domains:

- To create a domain, enter the following command:

```
adapter[admin]>create domain DomainName
```

- To delete a domain, enter the following command:

```
adapter[admin]>delete domain DomainName
```

- To delete a domain that contains one or more app spaces, enter the following command:

```
adapter[admin]>delete -force domain DomainName
```



If you delete a domain, all the app spaces, adapter nodes and adapter applications under the domain will also be deleted.

Managing App Spaces

An app space is a virtual pool of adapter nodes. You can use the **adapteradmin** utility to create, start, stop, and verify app spaces.

Prerequisites

Before using the **adapteradmin** utility, you have to start the adapter agent and TIBCO Hawk agent:

1. Open two command lines and navigate to the `TIBCO_HOME\afx\version_number\bin` directory.
2. On one command line, enter the following command to start the TIBCO Hawk agent:

```
tibhawkagent
```

3. On the other command line, enter the following command to start the adapter agent:

```
adapteragent
```

Procedure

1. Open a command line and navigate to the folder where the **adapteradmin** utility is located. By default, it is located in the `TIBCO_HOME\afx\version_number\bin` directory.

2. Enter the following command to start the Adapter Administration console:

```
adapteradmin
```

3. An app space must exist in a domain. If you have not created a domain, enter the following command to create one:

```
adapter[admin]> create domain DomainName
```

where:

DomainName

Name of the domain where the app space that you want to manage is added.

4. Enter the following commands to manage app spaces:

- To create an app space, enter the following command:

```
adapter[admin]> create -d DomainName appspace AppSpaceName
```

- To start an app space, enter the following command:

```
adapter[admin]> start -d DomainName appspace AppSpaceName
```

- To stop an app space, enter the following command:

```
adapter[admin]> stop -d DomainName appspace AppSpaceName
```

- To check the state of an app space, enter the following command:

```
adapter[admin@Domain]>show appspaces
```

See [AppSpaces State](#) for more details.

where:

DomainName

Name of the domain where the app space that you want to manage is added.

AppSpaceName

Name of the app space that you want to manage.

App Space State

The state of an app space is different during the deployment phase and runtime phase.

Deployment State

Deployment State	Description
InSync	The app space is synchronized with all the adapter nodes that are added to it.
OutOfSync	The app space is out of synchronization. The out-of-sync state might occur when an adapter agent is unreachable because of the network failure, or the adapter agent configuration has not been applied remotely.

Runtime State

Runtime State	Description
Running	All the adapter nodes added in the app space are running.
Stopped	All the adapter nodes added in the app space are stopped. If all the adapter nodes are stopped, the app space is automatically stopped.
Degraded	All the adapter nodes added in the app space drop to the minimum threshold.

Managing Adapter Nodes

An adapter node is a runtime entity that hosts runtime adapters. You can use the **adapteradmin** utility to create, start, stop, and verify adapter nodes.

Prerequisites

Before using the **adapteradmin** utility, you have to start the adapter agent and TIBCO Hawk agent:

1. Open two command lines and navigate to the *TIBCO_HOME\afx\version_number\bin* directory.
2. On one command line, enter the following command to start the TIBCO Hawk agent:

```
tibhawkagent
```

3. On the other command line, enter the following command to start the adapter agent:

```
adapteragent
```

Procedure

1. Open a command line and navigate to the folder where the **adapteradmin** utility is located. By default, it is located in the *TIBCO_HOME\afx\version_number\bin* directory.
2. Enter the following command to start the Adapter Administration console:
3. An adapter node must exist in an app space. If you have not created an app space, enter the following command to create one:

```
adapter[admin]> create -d DomainName appspace AppSpaceName
```

where:

DomainName

Name of the domain where the app space that contains the adapter node that you want to manage is added.

AppSpaceName

Name of app space where the adapter node that you want to manage is added.

4. Enter the following commands to manage adapter nodes:

- To create an adapter node, enter the following command:

```
adapter[admin]> create -d DomainName -a AppSpaceName adapternode  
AdapterNodeName
```

- To start an adapter node, enter the following command:

```
adapter[admin]> start -d DomainName -a AppSpaceName adapternode  
AdapterNodeName
```

- To stop an adapter node, enter the following command:

```
adapter[admin]> stop -d DomainName -a AppSpaceName adapternode  
AdapterNodeName
```

- To check the state of an adapter node, enter the following command:

```
adapter[admin@Domain/MyAppSpace]>show adapternodes
```

See [Adapter Node State](#) for more details.

where:

DomainName

Name of the domain where the app space is added.

AppSpaceName

Name of the app space where the adapter node is added.

AdapterNodeName

Name of the adapter node that you want to manage.

Adapter Node State

The state of an adapter node is different during the deployment phase and runtime phase.

Deployment States

Deployment State	Description
InSync	The adapter node is synchronized with deployment features, configurations, or both.

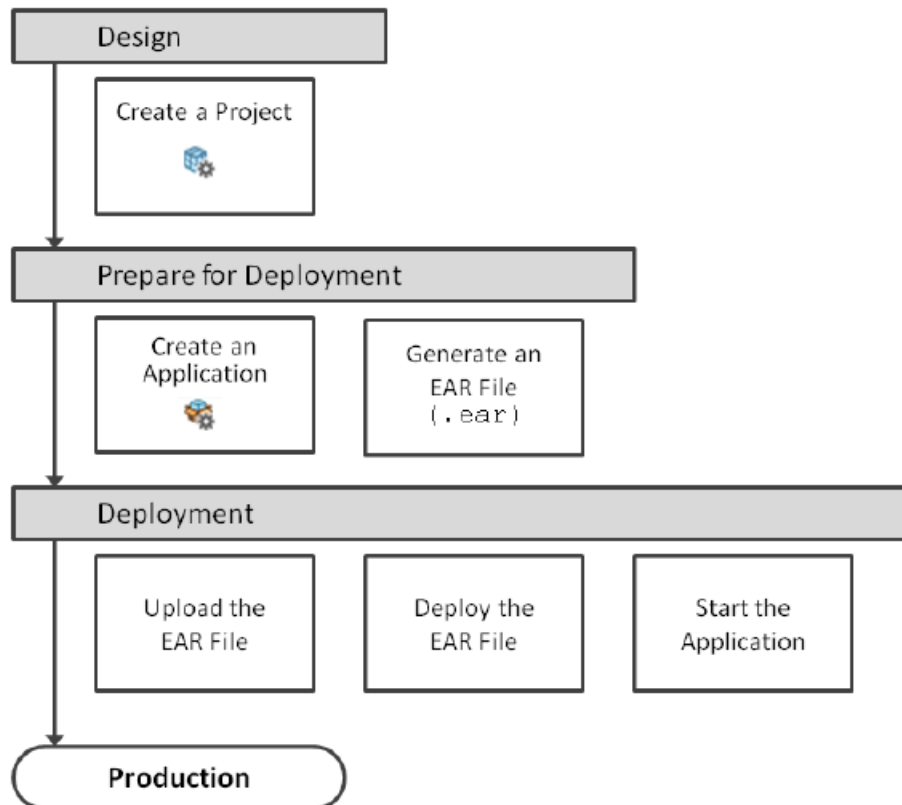
Runtime State

Runtime State	Description
Running	The adapter node is successfully initialized.
Stopped	The adapter node is not running on the adapter agent.

Managing Adapter Applications

An adapter application is a BusinessWorks application that is configured with an adapter configuration. You can use the **adapteradmin** utility to deploy and manage adapter applications.

The following figure illustrates the life cycle of an adapter application:



- In the design phase, you have to [configure an adapter application](#) with an adapter configuration to communicate with the enterprise.
- In the preparation phase, you have to [generate an application archive](#) of the adapter application that you want to deploy.
- In the deployment phase, first, you have to [upload the application archive](#); next, [deploy the adapter application](#), and then [start the adapter application](#).

Uploading an Application Archive

The generated application archive is an EAR file that contains the metadata information of an adapter application. Before deploying an adapter application, you have to upload the application archive to a domain.

Prerequisites

- The TIBCO Hawk agent and adapter agent are started. See [Starting an Adapter Agent](#) for details.
- You have generated the EAR file. See [Generating an Application Archive](#) for details.

Procedure

1. Open a command line and navigate to the folder where the **adapteradmin** utility is located.
By default, it is located in the *TIBCO_HOME\afx\version_number\bin* directory.

2. Enter the following command to start the Adapter Administration console:

```
adapteradmin
```

3. Enter the following command to upload the EAR file to a domain:

```
adapter[admin@MyDomain]>upload -d DomainName EARFilePath
```

where:

DomainName

Name of the domain where the adapter application archive file is uploaded.

EARFilePath

Absolute path of the EAR file that you want to upload.



On Microsoft Windows, you must use the forward slashes (/) in the file path.

For example, adapter[admin@MyDomain]> upload -d d1 C:/SAP_Adapter/salesforce_opportunity_to_sap_orderProject.application_1.0.0.ear

Deploying an Application Archive

After uploading an application archive to a domain, you can deploy an application archive to an app space.

Prerequisites

- The TIBCO Hawk agent and adapter agent are started. See [Starting an Adapter Agent](#) for details.
- You have uploaded the EAR file. See [Uploading an Application Archive](#) for details.

Procedure

1. Open a command line and navigate to the folder where the **adapteradmin** utility is located.
By default, it is located in the *TIBCO_HOME\afx\version_number\bin* directory.

2. Enter the following command to start the Adapter Administration console:

```
adapteradmin
```

3. Enter the following command to deploy the EAR file to an app space:

```
adapter[admin@MyDomain]>deploy -d DomainName -a AppSpaceName EARFileName
```

where:

DomainName

Name of the domain where the adapter application archive file is uploaded.

AppSpaceName

Name of the app space where the adapter application archive file is deployed.

EARFileName

Name of the EAR file that you want to deploy.

Starting an Adapter Application

After deploying an application archive, you can start an adapter application by using the **start** command.

By default, the adapter application is not started after deploying the application archive. However, if you set the `-as(autostart)` option to `true` when deploying the application archive, the adapter application is automatically started after the deployment.

In an app space, if one or more adapter nodes are in the stopped state, the adapter application starts only in the running adapter node; if none of the adapter nodes is started, the adapter application is not started.

Prerequisites

- The TIBCO Hawk agent and adapter agent are started. See [Starting an Adapter Agent](#) for details.
- You have deployed the EAR file. See [Deploying an Application Archive](#) for details.
- The app space where the EAR file is deployed is started.

Procedure

1. Open a command line and navigate to the folder where the **adapteradmin** utility is located. By default, it is located in the `TIBCO_HOME\afx\version_number\bin` directory.

2. Enter the following command to start the Adapter Administration console:

```
adapteradmin
```

3. Enter the following command to start an adapter application:

```
adapter[admin@MyDomain]>start -d DomainName -a AppSpaceName application
ApplicationName version
```

where:

DomainName

Name of the domain where the adapter application archive file is uploaded.

AppSpaceName

Name of the app space where the adapter application archive file is deployed.

ApplicationName Version

Name and version of the adapter application that you want to start.

Stopping an Adapter Application

You can use the **stop** command to stop an adapter application.

Prerequisites

The TIBCO Hawk agent and adapter agent are started. See [Starting an Adapter Agent](#) for details.

Procedure

1. Open a command line and navigate to the folder where the **adapteradmin** utility is located. By default, it is located in the `TIBCO_HOME\afx\version_number\bin` directory.

2. Enter the following command to start the Adapter Administration console:

```
adapteradmin
```

3. Enter the following command to stop an adapter application:

```
adapter[admin@MyDomain]>stop -d DomainName -a AppSpaceName application
ApplicationName version
```

where:

DomainName

Name of the domain where the adapter application archive file is uploaded.

AppSpaceName

Name of the app space where the adapter application archive file is deployed.

ApplicationName Version

Name and version of the adapter application that you want to stop.

Undeploying an Adapter Application

Undeploying an adapter application removes the adapter application from an app space. You can undeploy an adapter application by using the **undeploy** command.

Prerequisites

The TIBCO Hawk agent and adapter agent are started. See [Starting an Adapter Agent](#) for details.

Procedure

1. Open a command line and navigate to the folder where the **adapteradmin** utility is located. By default, it is located in the *TIBCO_HOME\afx\version_number\bin* directory.
2. Enter the following command to start the Adapter Administration console:
adapteradmin
3. Enter the following command to undeploy an adapter application:

```
adapter[admin@MyDomain]>undeploy -d DomainName -a AppSpaceName application
ApplicationName version
```

where:

DomainName

Name of the domain where the adapter application archive file is uploaded.

AppSpaceName

Name of the app space where the adapter application archive file is deployed.

ApplicationName Version

Name and version of the adapter application that you want to undeploy.

Verifying an Adapter Application

You can check the state of an adapter application by using the **show** command.

Prerequisites

The TIBCO Hawk agent and adapter agent are started. See [Starting an Adapter Agent](#) for details.

Procedure

1. Open a command line and navigate to the folder where the **adapteradmin** utility is located.
By default, it is located in the `TIBCO_HOME\afx\version_number\bin` directory.

2. Enter the following command to start the Adapter Administration console:
`adapteradmin`

3. Enter the following command to check the state of an adapter application:
`adapter[admin@Domain/AppSpace/AdapterNode]>show applications`



You can use the `cd` command to select the adapter node that the adapter application is deployed to.

See [Adapter Application State](#) for more details.

Adapter Application State

The state of an adapter application is different during the deployment phase and runtime phase.

Deployment State

Deployment State	Description
Deployed	The adapter application is successfully deployed and ready to start.
DeployFailed	The adapter application is failed to deploy.
UndeployFailed	The adapter application is failed to undeploy.

Runtime State

Runtime State	Description
Running	The adapter application is running.
Stopped	The adapter application is stopped.
Stopping	Transitional period, but potentially longer lasting state that indicates that the application is being stopped and waiting for jobs to finish.
Impaired	The dependency of the adapter application is unavailable or is impaired. When the minimum instance threshold is not reached, the adapter application is also impaired. In this state, you cannot start the adapter application.
StartFailed	The adapter application fails to start.
DeployFailed	The deployment fails and makes the application bundle in INSTALLED state. This problem can only be resolved by either deploying missing dependencies or undeploying the adapter application.

Runtime State	Description
Unreachable	The adapter application cannot be managed by the adapter agent.

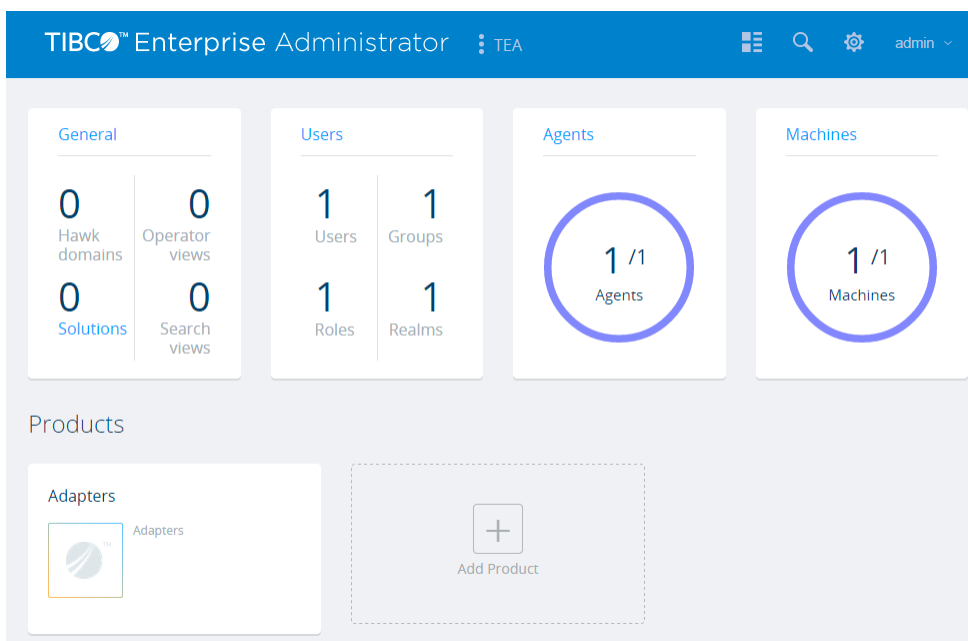
Working with TIBCO Enterprise Administrator

By integrating with TIBCO Enterprise Administrator, you can view and monitor entities in the Admin UI provided by TIBCO Enterprise Administrator.

TIBCO Enterprise Administrator provides a centralized administrative interface to manage and monitor multiple TIBCO products deployed in an enterprise. TIBCO Enterprise Administrator is based on an agent-based architecture.

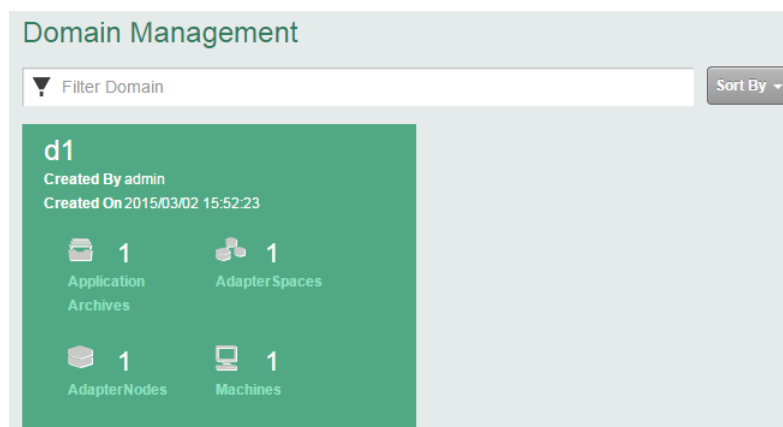
To view and monitor TIBCO adapters in the Admin UI provided by TIBCO Enterprise Administrator, you must register an adapter agent with a TEA server either by using the `registerteagent` command or using the Admin UI. See [Registering an Adapter Agent with a TEA Server](#) and [Registering an Adapter Agent in Admin UI](#) for details.

Open a web browser and enter the Admin URL to open the Admin UI, for example, `http://{hostname}:8777/tea/`. Provide your user name and password to log in. By default, the user name and password is admin. After login, the following landing page is displayed.





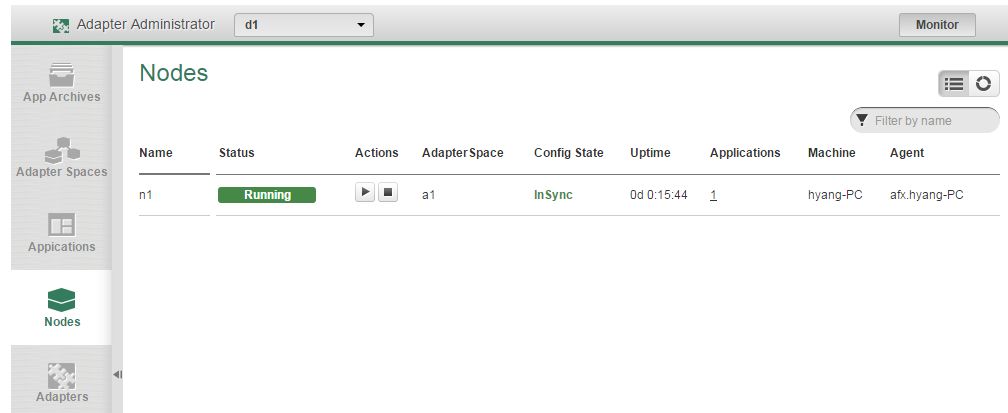
On the landing page, you can:

- Click **Adapters** in the **Products** area to view the created entities. On the Domain Management page, you can get the general information about a domain.

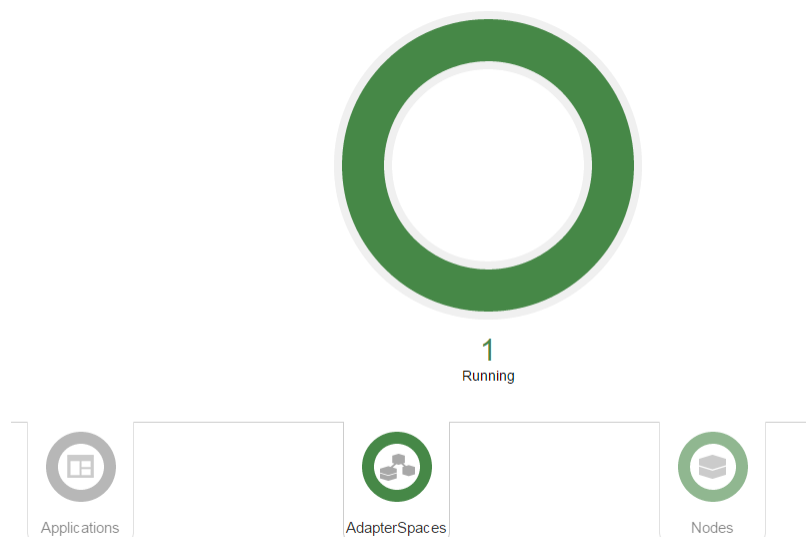


- Click an entity on the Domain Management page. The Adapter Administrator page is displayed where you can get detailed information of the selected entity.

You can also click  or  to start or stop the selected entity.



- Click **Monitor** in the upper-right corner of page to check the state of runtime entities.



Registering an Adapter Agent in Admin UI

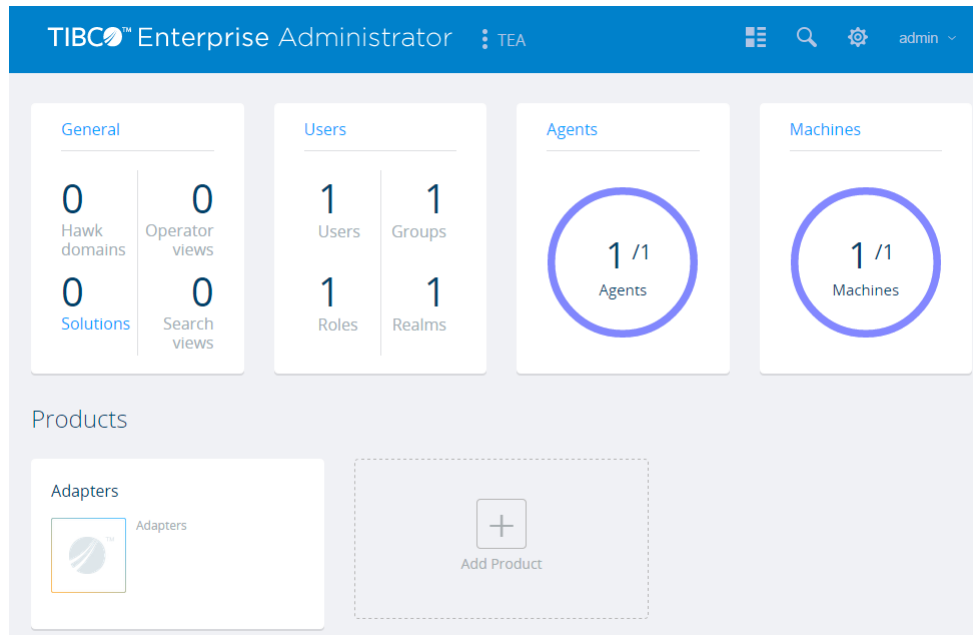
After registering an adapter agent with a TEA server, you can view and monitor adapters in the Admin UI provided by TIBCO Enterprise Administrator.

Prerequisites

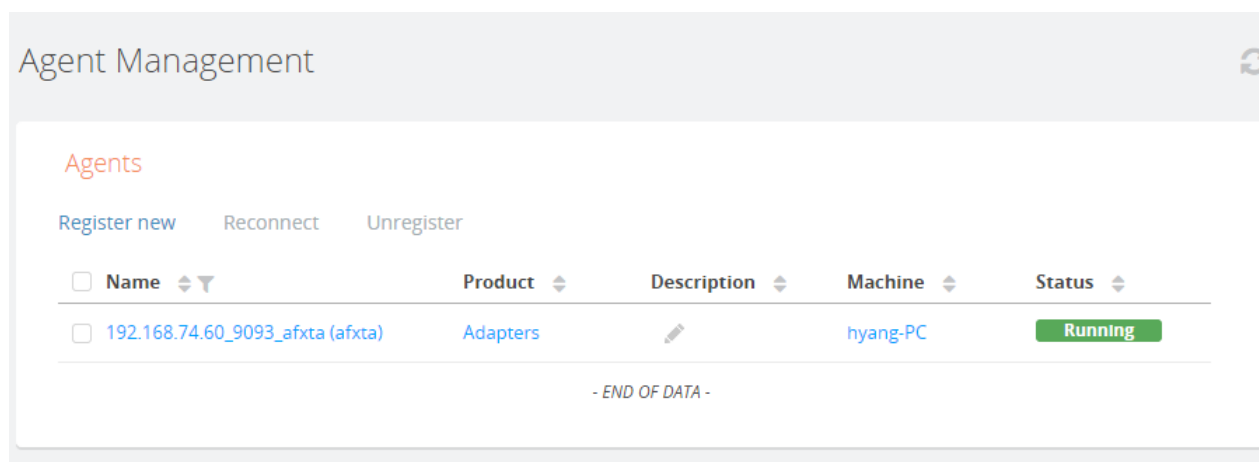
- On a command line, navigate to the `TIBCO_HOME\afx\version_number\bin` directory and enter `tibhawkagent` to start the TIBCO Hawk agent.
- On a command line, navigate to the `TIBCO_HOME\afx\version_number\bin` directory and enter `adapteragent` to start the adapter agent that you want to register.
- On a command line, navigate to the `TIBCO_HOME\tea\version_number\bin` directory and enter `tea` to start the TEA server to be registered with.

Procedure

1. Open a web browser and enter the Admin URL to open the Admin UI.
For example, `http://{host-name}:8777/tea/`.
2. Provide the user name and password to log in. Click **Sign In**.
By default, the user name and password is admin.
3. On the landing page, click **Agents** to open the Agent Management page.



4. Click **Register New**, and then provide the adapter agent information in the displayed Register Agent page. Click **Register**.



Getting Help Information

You can get help information of the **adapteradmin** utility or a specific command by using the **Help** command.

On a command line, open the Adapter Administration console and enter the following command to get help information about the **adapteradmin** utility:

```
adapteradmin help
```

The following help information is displayed:

```

USAGE
    adapterAdmin [options] command <args>
OPTIONS
    -b,--batch                Read a series of commands from stdin
    -config <file>            Use given file for server instance
configuration
    -D <property=value>       Use value for given property
    -f <file[,<file>]>        Read a series of commands from a comma
separated list of files
    -l,--login <arg>          Login id to use for the command session
    -logconfig <file>         Use given file for logback configuration
    -x,--xtrace               Echo the command to execute
COMMANDS
    cd                        Set the entity scope of commands, e.g. select a Domain or an
AppSpace within a Domain.
    create                   Creates entities, e.g. domain, appspace, adapternode, etc.
    delete                  Deletes entities, e.g. domain, appspace, adapternode, archive.
    deploy                   Deploys an Adapter application into an AppSpace
    exit                     End the current session
    help                     Displays usage information about available commands
    registeragent            Registers an AdapterAgent to a Domain and/or AppSpace
    registerteaagent         Registers Adapter TEA Agent with TEA Server
    shell:cat                Displays the content of a file or URL.
    shell:clear              Clears the console buffer.
    shell:date               Display the current time in the given FORMAT
    shell:each               Execute a closure on a list of arguments.
    shell:echo               Echoes or prints arguments to STDOUT.
    shell:exec               Executes system processes.
    shell:grep               Prints lines matching the given pattern.
    shell:head               Displays the first lines of a file.
    shell:history            Prints command history.
    shell:if                 If/Then/Else block.
    shell:more               File pager.
    shell:printf             Formats and prints arguments.
    shell:sleep              Sleeps for a bit then wakes up.
    shell:sort

```

```

        Writes sorted concatenation of all files to standard output.
shell:tac
        Captures the STDIN and returns it as a string. Optionally writes
        the content to a file.
shell:tail
        Displays the last lines of a file.
show
        Display information about entities, e.g. machine, agent, domain,
        adapternodes, adapterinstances, etc.
start
        Start entities, e.g appspace, adapternodes, etc.
stop
        Stop entities, e.g appspace, adapternodes, etc.
undeploy
        Undeploys an application
upload
        Uploads an ear file into the domain.

```

Getting Help Information of a Command

To get help information of a command, enter `help` followed by the command name. For example, to get help information of the `create` command, enter the following command in the Adapter Administration console:

```
help create
```

The following help information is displayed:

```

DESCRIPTION
    *:create

    Creates entities, e.g. domain, appspace, adapternode, etc.

SYNTAX
    *:create [options] entity name

ARGUMENTS
    entity
        Type of entity [ domain | appspace | adapternode ]
    name
        Name of entity [domain | appspace | adapternode ]

OPTIONS
    -v, -version
        Version of AdapterFramework, Applicable when entity is an AppSpace
    --help
        Display this help message
    -minNodes, -minNodes
        Minimum number of AdapterNode to be running, out of N
        AdapterNodes, before AppSpace is considered Impaired,
        applicable when entity is an AppSpace.
    -agent, -agent
        Agent name, Applicable when entity is an AppSpace or AdapterNode
    -home, -domainHome
        Fully qualified file path to the folder where all the files
        related to this domain are managed, applicable when the
        entity is a domain.
    -descr, -description
        Description of entity
    -r, -lax
        Return success when entity already exists
        (defaults to false)
    -l, -login
        Login name of AdapterNodes, Applicable when entity is an
        AdapterNode
        (defaults to admin)
    -a, -appspace
        AppSpace name, Applicable when entity is an AdapterNode
    -d, -domain
        Domain name

```

Adapter Administration Command-Line Utility

The **adapteradmin** utility provides a command-line Adapter Administration console, where you can create and manage domains, app spaces, adapter nodes, application archives, and adapter applications.

A range of commands are available in the **adapteradmin** utility. The Adapter administration commands can be issued from a command line in the following format:

```
adapteradmin command [options]
```

The following are Adapter administration commands:



The **registeragent** command is not supported from the 1.3.1 release.

- [create](#)
- [delete](#)
- [deploy](#)
- [registerteagent](#)
- [show](#)
- [start](#)
- [stop](#)
- [undeploy](#)
- [upload](#)

create

Use the **create** command to create runtime entities, such as domains, app spaces, and adapter nodes.

```
SYNTAX
*:create [options] entity name
ARGUMENTS
    entity
        Type of entity [ domain | appspace | adapternode]
    Name
        Name of entity [domain | appspace | adapternode ]
OPTIONS
    --help
        Display this help message
    -v, -version
        Version of AdapterFramework, Applicable when entity is an AppSpace
    -minNodes, -minNodes
        Minimum number of AdapterNode to be running, out of N AdapterNodes,
        before AppSpace is considered Impaired, Applicable when entity is
        an AppSpace
    -agent, -agent
        Agent name, Applicable when entity is an AppSpace or AdapterNode
    -home, -domainHome
        Fully qualified file path to the folder where all the files related
        to this domain are managed, Applicable when the entity is a domain
    -descr, -description
        Description of entity
    -l, -login
        Login name of AdapterNodes, Applicable when entity
```

delete

Use the **delete** command to delete runtime entities, such as such as domains, app spaces, and adapter nodes.

```
SYNTAX
*:delete [options] entity name
```

```

ARGUMENTS
    entity
        Type of entity [ domain | appspace | adapternode | archive]
    Name
        Name of entity [domain | appspace | adapternode | archive]
OPTIONS
    -c, -force
        Force deletion even if there are child entities
        <defaults to false>
    -path, -path
        Relative path to the domainName folder where this ear file is uploaded
        (can only contain alpha numeric characters, -, _ ,., /)
    -r, -lax
        Return success even when the entity does not or no longer exist
        (defaults to false)
    -v, -version
        Version of BW, Applicable when entity is an AppSpace
    -a, -appspace
        AppSpace name, Applicable when entity is an AdapterNode
    -d, -domain
        Domain name

```

deploy

Use the **deploy** command to deploy an adapter application to app space.

```

SYNTAX
    *:deploy [options] [earFileName]
ARGUMENTS
    earFileName
        Name of the application archive
OPTIONS
    -a, -appspace
        AppSpace name
    -pf, -profilefile
        Location of the Application Properties profiles to use instead of
        the packaged profiles.
    -help
        Display this help message
    -path, -path
        Relative path of the domainHome folder where the EAR file is uploaded
        (can only contain alpha numeric characters, -, _ ,., /)
    -descr, -description
        Description of entity
    -as, -startondeploy
        Start applications on the AdapterNodes after deployment [true|false]
    -p, -profile
        Name of the Application Properties profile to use. If not specified,
        the default profile of the application archive is used.
    -d, -domain,
        Domain name

```

registerteagent

Use the **registerteagent** command to register an adapter agent with a TEA server.

```

SYNTAX
    *:registerteagent [options] serverURL
ARGUMENTS
    serverURL
        TEA server URL, for example, http://localhost:8777/tea
OPTIONS
    -agentName
        Name of the adapter agent to register. Default: local TEA agent
    -help
        Display this help message

```

show

Use the **show** command to get the detailed information of an entity.

```
SYNTAX
*:show [options] [entity] [name] [version]
ARGUMENTS
    entity
        Type of entity [ domains | machines | agents | appspace |
        adapternodes| applications | adapter instances | archive | archives]
    name
        Name of entity [Name of application | Name of archives prepended
        with path]
    version
        Version of entity [application]
OPTIONS
    -app, -adapterapp
        Name of the Adapter application
    -help
        Display this help message
    -n, -adapternode
        Name of the AdapterNode
    -a, -appspace
        Name of the AppSpace
    -d, -domain
        Domain name
```

start

Use the **start** command to start runtime entities, such as adapter nodes, adapter applications, and app spaces.

```
SYNTAX
*:start [options] [entity] [name] [version]
ARGUMENTS
    entity
        Type of entity [ appspace | adapternode| application | adapterinstance]
    Name
        Name of entity [appspace | adapternode | application | adapterinstance]
OPTIONS
    -app, -adapterapp
        Name of the AdapterApplication
    -n, -adapternode
        Name of the AdapterNode
    -help
        Display this help message
    -a, -appspace
        AppSpace name, Applicable when entity is an AdapterNode
    -d, -domain
        Domain name
```

stop

Use the **stop** command to stop runtime entities, such as adapter nodes, adapter applications, and app spaces.

```
SYNTAX
*:stop [options] [entity] [name] [version]
ARGUMENTS
    entity
        Type of entity [ appspace | adapternode| application | adapterinstance]
    Name
        Name of entity [appspace | adapternode | application | adapterinstance]
OPTIONS
    -app, -adapterapp
        Name of the AdapterApplication
    -n, -adapternode
        Name of the AdapterNode
    -a, -appspace
```

```

AppSpace name, Applicable when entity is an AdapterNode
-help
    Display this help message
-d, -domain
    Domain name

```

undeploy

Use the **undeploy** command to remove a deployed adapter application.

```

SYNTAX
    *:undeploy [options] [entity] [name] [version]
ARGUMENTS
    entity
        Type of entity [ application ]
    name
        Name of the application
    version
        Version of the application [major.minor]
OPTIONS
    -a, -appspace
        AppSpace Name
    -help
        Display this help message
    -d, -domain
        Domain name

```

upload

Use the **upload** command to upload an EAR file to a domain.

```

SYNTAX
    *:upload [options] location
ARGUMENTS
    location
        location of the EAR file
OPTIONS
    -path, -path
        Relative path to the domainHome folder where the EAR file is stored
        (can only contain alpha numeric characters, -, _ ,., /)
    -help
        Display this help message
    -d, -domain
        Domain name

```