Stonebranch Solutions

Version 4.2.0

Universal Enterprise Controller

Reference Guide

uec-ref-4200

Universal Enterprise Controller

Reference Guide

Stonebranch Solutions 4.2.0

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Stonebranch Documentation Policy

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SAP Certified Integration

Summary of Changes

Changes for Universal Enterprise Controller 4.2.0 Reference Guide (uec-ref-4200)
August 6, 2010

Universal Enterprise Controller 4.2.0.0

- Moved detailed technical information from Universal Enterprise Controller 4.1.0 User Guide to Universal Enterprise Controller 4.2.0 Reference Guide.

  Information on component features, database administration, and examples was moved to the Indesca and Infitran 4.2.0 User Guides.
- Added information describing support of the zFS file system for Universal Enterprise Controller.
- Modified Section 2.4.3 System MODIFY Command:
- Added Configuration Options table entry for BROKER_STATUS_ALERTS_AT_STARTUP in the following sections:
  - Section 2.4 Universal Enterprise Controller for z/OS
  - Section 2.5 Universal Enterprise Controller for Windows
- Added Configuration Options table entry and Command Line Syntax entry for UNIX_DB_DATA_SET in Section 2.4 Universal Enterprise Controller for z/OS.
- Added the following sections in Chapter 3 Universal Enterprise Controller Configuration Options:
  - Section 3.7 BROKER_STATUS_ALERTS_AT_STARTUP
  - Section 3.48 UNIX_DB_DATA_SET
- Added Definitions Category configuration options table entry and Command Line Syntax entry for GROUPS in Chapter 5 UECLoad Utility.
- Added Section 6.20 GROUPS in Chapter 6 UECLoad Configuration Options.

Changes for Universal Enterprise Controller 4.1.0 Reference Guide (uec-ref-4100)
February 10, 2010

Universal Enterprise Controller Client Applications 4.1.0.0

- Renamed Universal Activity Monitor as I-Activity Monitor.
- Renamed Universal Management Console as I-Management Console.
- Renamed UEC Administrator as I-Administrator.

Changes for Universal Enterprise Controller 3.2.0 Reference Guide (uec-ref-3203)
November 2, 2009

Universal Products 3.2.0.9

- Removed information describing support of the zFS file system for Universal Enterprise Controller in Chapter 3 Universal Enterprise Controller Configuration Options.

Changes for Universal Enterprise Controller 3.2.0 Reference Guide (uec-ref-3202)
September 8, 2009

- Created this first version of the Universal Enterprise Controller 3.2.0 Reference Guide.

Universal Enterprise Controller 3.2.0.4

- Added the following configuration options in Chapter 3 Universal Enterprise Controller Configuration Options:
  - SAP_POLLING_INTERVAL
  - TMP_DIRECTORY
  - UNIX_DB_DATA_SET
- Added the following code pages in Section 7.2 Character Code Pages:
  - IBM875
  - IBM4971

Contents

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Preface

Document Structure

This document is written using specific conventions for text formatting and according to a specific document structure in order to make it as useful as possible for the largest audience. The following sections describe the document formatting conventions and organization.

Cross-Reference Links

This document contains cross-reference links to and from other Stonebranch Solutions documentation.

In order for the links to work correctly:

- Place the documents in the same folder.
- In Adobe Reader / Adobe Acrobat, de-select **Open cross-document link in same window** in the **General** category of your **Preferences** dialog (selected from the **Edit** menu).

Conventions

Specific text formatting conventions are used within this document to represent different information. The following conventions are used.

Typeface and Fonts

This document provides tables that identify how information is used. These tables identify values and/or rules that are either pre-defined or user-defined:

- *Italics* denotes user-supplied information.
- **Boldface** indicates pre-defined information.

Elsewhere in this document, **`This Font`** identifies specific names of different types of information, such as file names or directories (for example, **`\abc\123\help.txt`**).

Command Line Syntax Diagrams

Command line syntax diagrams use the following conventions:

Convention	Description
`bold monospace font`	Specifies values to be typed verbatim, such as file / data set names.
`italic monospace font`	Specifies values to be supplied by the user.
[]	Encloses configuration options or values that are optional.
{}	Encloses configuration options or values of which one must be chosen.
|	Separates a list of possible choices.
. . .	Specifies that the previous item may be repeated one or more times.
BOLD UPPER CASE	Specifies a group of options or values that are defined elsewhere.

Table P.1 Command Line Syntax

Operating System-Specific Text

Most of this document describes the product in the context of all supported operating systems. At times, it is necessary to refer to operating system-specific information. This information is introduced with a special header, which is followed by the operating system-specific text in a different font size from the normal text.

z/OS

This text pertains specifically to the z/OS line of operating systems.

This text resumes the information pertaining to all operating systems.

Tips from the Stoneman

Stoneman's Tip

Look to the Stoneman for suggestions
or for any other information
that requires special attention.

Vendor References

References are made throughout this document to a variety of vendor operating systems. We attempt to use the most current product names when referencing vendor software.

The following names are used within this document:

- **z/OS** is synonymous with IBM z/OS and IBM OS/390 line of operating systems.
- **Windows** is synonymous with Microsoft's Windows 2000 / 2003 / 2008, Windows XP, Windows Vista, and Windows 7 lines of operating systems. Any differences between the different systems will be noted.
- **UNIX** is synonymous with operating systems based on AT&T and BSD origins and the Linux operating system.
- **IBM i** is synonymous with IBM i/5, IBM OS/400, and OS/400 operating systems.
- **IBM System i** is synonymous with IBM i Power Systems, IBM iSeries, IBM AS/400, and AS/400 systems.

Note: These names do not imply software support in any manner. For a detailed list of supported operating systems, see the Stonebranch Solutions 4.2.0 Installation Guide.

Document Organization

The document is organized into the following chapters:

- Universal Enterprise Controller Overview (Chapter 1)
  Overview of Universal Enterprise Controller functionality.
- Universal Enterprise Controller (Chapter 2)
  Information about configuring Universal Enterprise Controller.
- Universal Enterprise Controller Configuration Options (Chapter 3)
  Detailed information on all Universal Enterprise Controller configuration options for all operating systems.
- Universal Event Subsystem (Chapter 4)
  Information about the Universal Event Subsystem of Universal Enterprise Controller.
- UECLoad Utility (Chapter 5)
  Information about the UECLoad utility of the Universal Enterprise Controller.
- UECLoad Configuration Options (Chapter 6)
  Detailed information on all UECLoad configuration options for all operating systems.
- Additional Information (Chapter 7)
  Additional information related to Universal Enterprise Controller.
- Troubleshooting (Chapter 8)
  Information about troubleshooting Universal Enterprise Controller.
- Customer Support (Appendix A)
  Customer support contact information for Universal Enterprise Controller.

CHAPTER 1

Universal Enterprise Controller Overview

1.1 Overview

Universal Enterprise Controller (UEC) is a Stonebranch Solutions server application, for Windows and z/OS operating systems, that monitors the status of all Agent installations in your enterprise.

(An Agent is a single Stonebranch Solutions installation comprised of one Universal Broker and one or more Stonebranch Solutions components.)

UEC sends out alerts to any connected Agent-monitoring applications whenever:

- Universal Broker is unreachable.
- Universal Broker is not responding.
- Agent component enters an orphaned or disconnected state.

These alerts are posted to the:

- Event Log (when running under Windows)
- Console (when running under z/OS)

Automation tools can be used in conjunction with these messages to perform operations based on agent failures.

1.2 Universal Enterprise Controller System

Figure 1.1, below, illustrates the Universal Enterprise Controller system.

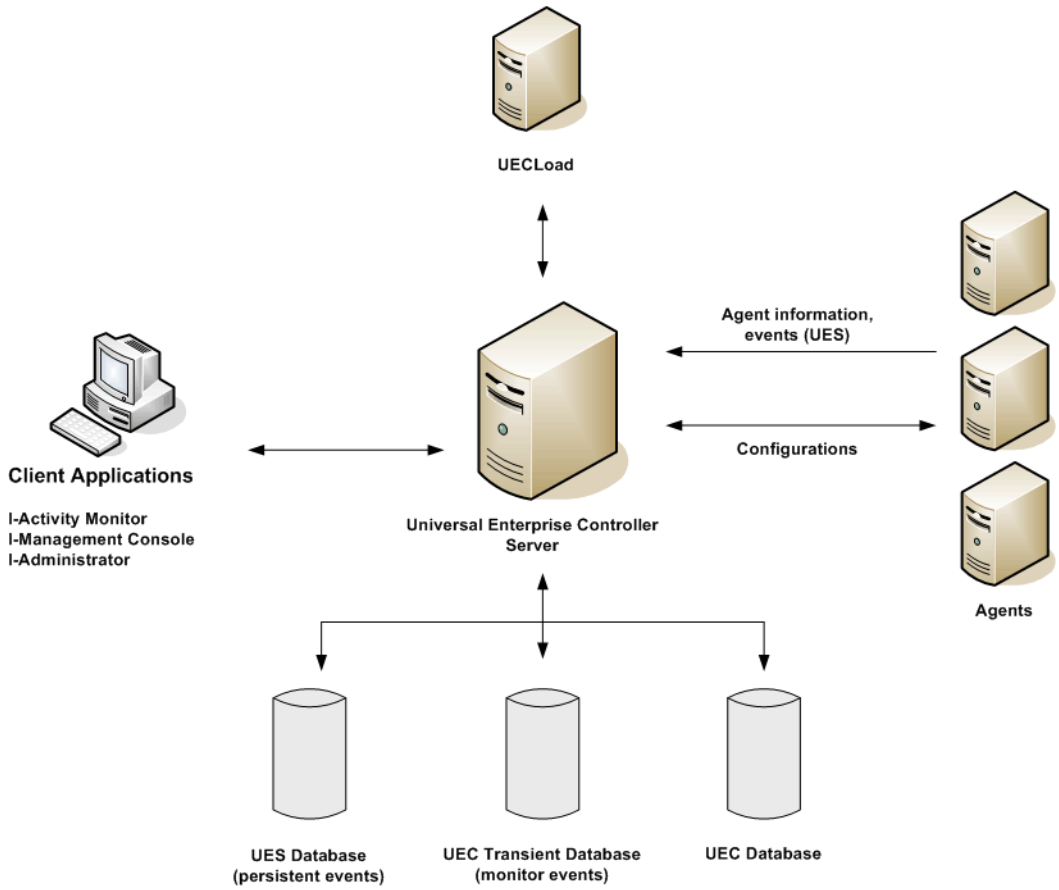

Figure 1.1 Universal Enterprise Controller - System

See Chapter 2 Universal Enterprise Controller for detailed information on executing and configuring UEC.

1.3 Additional UEC Functionality

As illustrated in Figure 1.1, UEC also provides the following additional functionality:

- Universal Event Subsystem
- UECLoad Utility
- Universal Enterprise Controller Client Applications (for Windows)

1.3.1 Universal Event Subsystem

The Universal Event Subsystem (UES) is a subsystem of Universal Enterprise Controller that records, routes, and manages event messages generated by Stonebranch Solutions components.

See Chapter 4 Universal Event Subsystem for detailed information on this subsystem.

1.3.2 UECLoad Utility

The UECLoad utility permits UEC users to add, delete, and view Agents in the UEC database.

Via UECLoad, a user can add or delete individual Agents or supply an Agents definition file (**`deffile`**) with definitions to be added or deleted from UEC.

UECLoad also can be used to export existing agent definitions (which later can be used as a definition file to re-create the agent definitions) and event records (from UES).

See Chapter 5 UECLoad Utility for detailed information on this utility.

1.3.3 Universal Enterprise Controller Client Applications (for Windows)

Under the Windows operating system, UEC connects to three client applications:

1. I-Administrator
2. I-Activity Monitor
3. I-Management Console

These client applications are run as stand-alone applications.

See the Universal Enterprise Controller Client Applications User Guide for detailed information on running these applications.

I-Administrator

The I-Administrator utility is used to administer the list of Agents that UEC will monitor. It also is used to administer UEC users and their permissions. With I-Administrator, the user can add, modify, and delete users, agents, groups, and SAP systems.

Note: A user must have UEC administrative rights – granted via I-Administrator – in order to use I-Administrator.

Upon installation of UEC, a default user ID (**`admin`**) and password (**`admin`**) are created having UEC administrative rights. It is recommended that you create another user with UEC administrative rights and then delete the default user.

I-Activity Monitor

The I-Activity Monitor connects to UEC. It displays information about the current status, posted alerts, and job and file activity for all Agents being monitored by UEC throughout an enterprise.

When an Agent or SAP system is added to UEC, via the I-Administrator application, UEC is able to collect information about that agent or SAP system.

Authorized users are able to use the I-Activity Monitor interface to stop running any Stonebranch Solutions component (if it is a component of an Agent being polled by UEC).

I-Management Console

The I-Management Console provides a graphical user interface for reconfiguring Agents.

I-Management Console provides two important features for this reconfiguration:

1. Reconfigure agents remotely, from a single machine.
2. Reconfigure multiple agents simultaneously.

CHAPTER 2

Universal Enterprise Controller

2.1 Overview

This chapter describes Universal Enterprise Controller (UEC) started procedure configuration.

It contains the following sections:

2.2 UEC Information

UEC controls two types of information:

- UEC-maintained information
- UEC-monitored information

2.2.1 UEC-Maintained Information

The information that UEC maintains is organized into four categories:

1. Users
2. Agents
3. SAP Systems
4. Groups

This information is maintained via the I-Administrator utility (see Chapter 3 I-Administrator in the Universal Enterprise Controller 4.2.0 Client Applications User Guide).

Users

Only valid UEC users have access to the Universal Enterprise Controller client applications (see Section 1.3.3 Universal Enterprise Controller Client Applications (for Windows). Each UEC user has a user name and password.

Associated with each user is:

- Set of permissions specifying the operations that the user can perform with UEC.
- List of groups containing the agents that the user can interact with via UEC.

UEC maintains its own user list. Each UEC user is assigned a set of permissions and user group membership.

Agents

An agent consists of:

- Agent name.
- Host address.
- Port on which the agent's Universal Broker is listening.

Adding an agent to UEC puts the agent on the UEC polling list. The agent then will be polled each cycle. Information about the status of the agent is sent back to any agent-monitoring utilities connected to UEC.

SAP Systems

An SAP system consists of:

- System name.
- Application Server Host (ASHOST)
- Client Number
- System Number

Adding an SAP system to UEC puts the system on the UEC polling list. The SAP system then will be polled each cycle. Information about the status of the SAP system is sent back to I-AM clients connected to UEC.

Groups

Groups provide a simple way of organizing agents and/or SAP systems. Each agent or SAP system can belong to one or more groups.

(All agents are placed automatically in the pre-defined **`All Agents`** group. All SAP systems are placed automatically in the pre-defined **`All SAP Systems`** group.)

Users have access only to the groups assigned to them by their UEC administrator. This means that a user working with the I-Activity Monitor application can only monitor agents and/or SAP systems in the groups assigned to that user.

2.2.2 UEC-Monitored Information

The information that UEC monitors is organized into four categories:

1. Alerts
2. Jobs
3. Files
4. Systems

This information can be viewed via the I-Activity Monitor utility (see Chapter 4 I-Activity Monitor in the Universal Enterprise Controller 4.2.0 Client Applications User Guide).

Alerts

UEC monitors alerts for all agents and SAP systems assigned to UEC.

Alerts are monitored until the alert condition has resolved.

Alert Types

UEC creates three types of alerts:

- Agent Down
  UEC was unable to establish a connection with the broker on the last poll attempt.
- Component Disconnected
  Server is not connected to the Manager. This occurs when a network error has occurred, the manager halted, or the manager host halted. The server is executing with either the network fault tolerant protocol, is restartable, or both.

  Note:The Server cannot determine whether or not the Manager is still executing because it cannot communicate with it.
- Component Orphaned
  Manager has terminated. The manager sends a termination message to the server to notify it of its termination prior to terminating. This state only occurs if the server is restartable.

Jobs

UEC monitors all Universal Command and Universal Data Mover jobs (active, completed, and failed) for all agents assigned to UEC.

Files

UEC monitors all files (active, completed, and failed) transferred by UDM for the Agents being monitored by UEC.

Systems

UEC monitors all Agents and SAP systems that have been assigned to UEC via the I-Administrator utility (see Chapter 3 I-Administrator in the Universal Enterprise Controller 4.2.0 Client Applications User Guide).

Note: The UEC MONITOR_EVENT_EXPIRATION option defines the length of time that each job and file is monitored (default is 24 hours).

2.3 Polling

2.3.1 Agent Polling

UEC periodically polls each agent in order to retrieve its status information. The polling request is made on the listening port for the agent's Universal Broker (default 7887).

When UEC polls a agent, it determines whether or not a change in status of the agent has occurred since the last poll. If the agent status has changed, UEC sends this information to the I-Activity Monitor to notify users.

The values specified for the following configuration options affect how polling occurs:

- BKR_QUERIES_PER_THREAD
- BKR_QUERY_THREADS
- BKR_QUERY_TIMEOUT
- POLLING_INTERVAL

These configuration values can be modified, allowing UEC to fit your monitoring needs.

Optimally, UEC attempts to poll every agent in the time interval specified by POLLING_INTERVAL. However, you can define an independent polling interval for a specific agent via the I-Administrator application. For example, if I-Administrator defines a polling interval of 10 seconds for **`agent 123`**, UEC will poll **`agent 123`** every 10 seconds and all other agents at the interval specified by POLLING_INTERVAL.

If, upon a poll, UEC is unable to complete communication with a agent in the number of seconds specified by BKR_QUERY_TIMEOUT, an error is reported which indicates that the agent has timed out.

Use the following equation to calculate the number of agents that UEC can poll at any given time:

Number of agents **=** BKR_QUERIES_PER_THREAD **x** BKR_QUERY_THREADS

Note: UEC can retrieve health and status information only from Universal Broker versions of 1.2.0 and higher. Earlier versions will be reported by UEC as unreachable or not running.

2.3.2 SAP System Polling

UEC periodically polls each SAP system in order to retrieve its status information. The polling request is performed via an RFC connection to the SAP system. When UEC polls a SAP system, it determines if a change in status of the system has occurred since the last poll. If the SAP system status has changed, UEC sends this information to the I-Activity Monitor to notify users.

In order to prevent the accidental locking of SAP accounts used by UEC, an SAP system will be dropped from the polling cycle if a logon authentication error occurs. This will prevent UEC from exceeding the number of failed logon attempts allowed by the SAP system.

When an SAP system is disabled due to a logon authentication error, a UNV4363T message is printed to the UEC log and an alert is sent to I-AM clients monitoring for alerts.

SAP system definitions that have been disabled due to a logon authentication error can be re-enabled by modifying the User ID, Password, or Client field via the I-Administrator client. When an SAP system is re-enabled, a UNV1059T message is printed to the UEC log and the associated alert is removed from I-Activity Monitor clients.

2.4 Universal Enterprise Controller for z/OS

Universal Enterprise Controller (UEC) for z/OS executes as a started task.

2.4.1 Starting UEC

The UEC started task, **UECTLR**, is started with the z/OS START command:

```
S UECTLR
```

2.4.2 Stopping UEC

The UEC started task is stopped with the z/OS MODIFY STOP command:

```
P UECTLR
```

After the STOP command is issued, UEC may take several seconds to shut down.

Note: The **UECTLR** started task should run at a high dispatch priority in order to avoid not being dispatched in a timely enough manner to process the agent polling protocol. If **UECTLR** is not dispatched appropriately, the Broker may be reported as timed out when the Broker itself still is operational.

2.4.3 System MODIFY Command

The UEC started task accepts commands via the system MODIFY command. The MODIFY command's **APPL=** parameter is required, since UEC runs as a USS address space.

DUMP Command

The DUMP command directs UEC to produce a Language Environment dump. The dump is written to the **CEEDUMP** ddname. While the dump is being produced, UEC is paused by LE until the dump completes, after which UEC continues processing.

In the example below, the procedure name **UECTLR** is assumed:

```
F UECTLR,APPL=DUMP
```

The DUMP command is used for diagnostic purposes. It should be executed only at the request of Stonebranch, Inc.

BROKERSTAT Command

The BROKERSTAT command provides on-demand Broker status alerting. It causes UEC to issue an alert message for all defined Brokers indicating their current internal state.

- Alert UNV1056T (Unable to connect) is issued for Brokers that are down.
- Alert UNV1059T (Broker responding) is issued for Brokers that are up.

The alert message is equivalent to what UEC issued at the time the alert was originally generated.

In the example below, the procedure name **UECTLR** is assumed:

```
F UECTLR,APPL=BROKERSTAT
```

Alerts issued on-demand (by BROKERSTAT) are not sent to the I-Activity Monitor client. (When issued under normal processing by UEC, the alerts are sent to I-Activity Monitor.)

2.4.4 JCL Procedure

Figure 2.1, below, illustrates the Universal Enterprise Controller for z/OS JCL procedure (**UECTLR**, located in the **SUNVSAMP** library).

```
//UECTLR   PROC SHLQ=#SHLQ.UNV,
//              PHLQ=#PHLQ.UNV,
//              RGN=100M,
//              UPARM=,
//              LEPARM=,
//              CFG=UECCFG00
//S1       EXEC PGM=UECTLR,REGION=&RGN,
//              PARM='ENVAR(TZ=EST5EDT) &LEPARM/&UPARM'
//STEPLIB  DD  DSN=&SHLQ..SUNVLOAD,
//              DISP=SHR
//UNVCONF  DD  DSN=&PHLQ..UNVCONF(&CFG),
//              DISP=SHR
//UNVNLS   DD  DSN=&SHLQ..SUNVNLS,
//              DISP=SHR
//UNVDB    DD  DSN=&PHLQ..UECDB,
//              DISP=SHR
//UNVMSGS  DD  SYSOUT=*,HOLD=YES
//UNVPRSR  DD  SYSOUT=*,HOLD=YES
//UNVTRACE DD  SYSOUT=*,HOLD=YES
//SYSPRINT DD  SYSOUT=*,HOLD=YES
//SYSOUT   DD  SYSOUT=*,HOLD=YES
//CEEDUMP  DD  SYSOUT=*,HOLD=YES
//SYSIN    DD  DUMMY
```

Figure 2.1 Universal Enterprise Controller for z/OS – JCL Procedure

2.4.5 DD Statements used in JCL Procedure

Table 2.1, below, describes the DD statements used in the Universal Enterprise Controller for z/OS JCL procedure illustrated in Figure 2.1.

ddname	DCB Attributes	Mode	Description
STEPLIB	DSORG=PO, RECFM=U	input	Stonebranch Solutions load library containing the program being executed.
UNVCONF	DSORG=PS, RECFM=(F, FB, V, VB)	input	UEC configuration member.
UNVNLS	DSORG=PO, RECFM=(F, FB, V, VB)	input	Stonebranch Solutions national language support library. Contains message catalogs and code page translation tables.
UNVDB	DSNTYPE=HFS	input, output	UEC database. Note: This ddname is not used when zFS data sets are used instead of HFS data sets.
UNVMSGS	DSORG=PS, RECFM=(F, FB, V, VB)	output	UEC message trace data.
UNVPRSR	DSORG=PS, RECFM=(F, FB, V, VB)	output	UEC parser trace data.
UNVTRACE	DSORG=PO, RECFM=(F, FB, V, VB), LRECL=256 or above.	output	UEC trace output.
SYSPRINT	DSORG=PS, RECFM=(F, FB, V, VB)	output	Standard output file for the UEC program.
SYSOUT	DSORG=PS, RECFM=(F, FB, V, VB)	output	Standard error file for the UEC program.
SYSIN	DSORG=PS, RECFM=(F, FB, V, VB)	input	Standard input file for the UEC program.

Table 2.1 Universal Enterprise Controller for z/OS – DD Statements in JCL Procedure

2.4.6 Configuration Options

This section identifies the configuration options used to execute Universal Enterprise Controller for z/OS.

Option Name	Description
BKR_QUERIES_PER_THREAD	Maximum number of simultaneous Broker queries allowed for each thread.
BKR_QUERY_THREADS	Number of process threads started to initiate Broker queries during a polling cycle.
BKR_QUERY_TIMEOUT	Period of time within which a Broker query must finish before timing out.
BROKER_STATUS_ALERTS_AT_STARTUP	Specification for whether or not UNV1059T alert messages (Broker responding) will be issued for initial Broker polls when Universal Enterprise Controller starts up.
CA_CERTIFICATES	UEC started task procedure ddname from which a PEM-formatted list of certificates is read.
CERTIFICATE	UEC started task procedure ddname from which a PEM-formatted certificate is read.
CERTIFICATE_REVOCATION_LIST	File name / ddname of the PEM-formatted CRL.
CODE_PAGE	Code page for text translation of network data.
COMM_SESSIONS_PER_THREAD	Maximum number of UEC client sessions that can occur on each of the communications threads.
COMM_THREADS	Number of threads created to perform communications between UEC and the UEC Client Applications.
COMMIT_COMPLETE_EXPIRATION	Deletes completed commit configurations, by age.
COMMIT_INCOMPLETE_EXPIRATION	Deletes incomplete commit configurations, by age.
CONVERT	Converts a pre-3.2.0 database into the current database format.
DELETE_EVENTS_ON_BROKER	Specification for whether or not events are deleted on the Universal Broker after they are retrieved and put into the UEC events database.
DNS_CACHE_TIMEOUT	Length of time to retain a resolved host name in memory cache.
DNS_POLLING_INTERVAL	Time interval at which the DNS cache is polled.
HELP	Write options help to SYSPRINT ddname.
HOSTNAME_RETRY_COUNT	Number of times that UEC will attempt to resolve the host name of a specified Universal Broker before it ends with a connect error.
JOB_THREADS	Number of threads created to perform internal tasks in UEC.
KEEP_MONITOR_EVENTS	Specification for whether or not monitor events are written into the UEC temporary database.
LOG_MESSAGES	Specification for whether or not to log all XML message traffic between UEC and any connected applications.

Option Name	Description
LOGIN_ATTEMPTS	Number of failed login attempts allowed by a user before being disconnected by UEC.
MESSAGE_DESTINATION	Location to which messages are written.
MESSAGE_LANGUAGE	Language used for messages.
MESSAGE_LEVEL	Level of messages written.
MONITOR_EVENT_EXPIRATION	Length of time that state data is retained in the UEC database.
MOUNT_POINT	z/OS UNIX directory in which the HFS or zFS data set is mounted.
MOUNT_POINT_MODE	z/OS UNIX access permission mode value with which the mounted database file system's root directory is set.
PERSISTENT_EVENT_EXPIRATION	Deletes event records, by age.
POLLING_INTERVAL	Time interval at which agents are polled.
PRIVATE_KEY	UEC started task procedure ddname from which a PEM-formatted private key is read.
PRIVATE_KEY_PWD	Password for the PRIVATE_KEY.
SAF_KEY_RING	SAF certificate key ring name.
SAF_KEY_RING_LABEL	SAF certificate key ring label.
SAP_POLLING_INTERVAL	Interval (in seconds) at which the SAP systems are polled for their status and job activity.
SERVICE_IP_ADDRESS	IP interface from which to accept connections.
SERVICE_PORT	Port from which to accept connections.
SSL_CIPHER_LIST	SSL cipher suite to be used for network communications.
SSL_IMPLEMENTATION	SSL implementation to be used for network configuration.
TMP_DIRECTORY	HFS directory in which Universal Enterprise Controller creates temporary files.
TRACE_FILE_LINES	Maximum number of lines written to the trace ddname.
TRACE_TABLE	Size of the trace table.
UNIX_DB_DATA_SET	HFS or zFS data set used for UEC's databases.
UPDATE_INTERVAL	Time interval at which connected I-Activity Monitor clients are updated.
USER_AUTHENTICATION_METHOD	Authentication method to be used when authenticating UEC user accounts.
VERSION	Writes the program version and copyright statement.

Table 2.2 Universal Enterprise Controller for z/OS – Configuration Options

2.4.7 Command Line Syntax

Figure 2.2, below, illustrates the command line syntax – using the long form of configuration options – of Universal Enterprise Controller for z/OS.

```
uec
[-ca_certs ddname]
[-cert ddname [-private_key ddname [-private_key_pwd pwd ] ] ]
[-crl ddname]
[-codepage codepage]
[-convert]
[-hostname_retry_count count]
[-keep_monitor_events option]
[-dest destination]
[-lang language]
[-level {trace|audit|info|warn|error}]
[-mount_point directory]
[-mount_point_mode mode]
[-unix_db_data_set DSN]
[-saf_key_ring name]
[-saf_key_ring_label label]
[-svcipaddr ipaddress]
[-svcport port]
[-ssl_cipher_list cipherlist]
[-ssl_implementation {openssl|system}]
[-tracefilelines lines]

uec
{-help | -version}
```

Figure 2.2 Universal Enterprise Controller for z/OS – Command Line Syntax

For a description of the options, see Chapter 3 Universal Enterprise Controller Configuration Options.

2.5 Universal Enterprise Controller for Windows

Universal Enterprise Controller (UEC) for Windows executes as a service.

Changes to UEC configuration requires service be stopped and restarted by the Windows Service Control Manager.

2.5.1 Starting and Stopping Universal Enterprise Controller for Windows

By default, UEC for Windows is set to start automatically whenever Windows is booted.

Changes to UEC configuration requires it to be stopped and restarted by the Windows Service Control Manager.

To access the Service Control Manager:

1. Click the **Control Panel** on the Windows Start menu.
2. Double-click the **Administrative Tools** icon on the Control Panel window.
3. Double-click the **Services** icon on the Administrative Tools window.
4. On the Services window, select Universal Enterprise Controller in the list of services.
5. In the Action menu, click:
   a. Stop to stop UEC for Windows.
   b. Start to start UEC for Windows.

2.5.2 Configuration Options

This section identifies the configuration options used to execute Universal Enterprise Controller for Windows.

Option Name	Description
BKR_QUERIES_PER_THREAD	Maximum number of simultaneous Broker queries allowed for each thread.
BKR_QUERY_THREADS	Number of process threads started to initiate Broker queries during a polling cycle.
BKR_QUERY_TIMEOUT	Period of time within which a Broker query must finish before timing out.
BROKER_STATUS_ALERTS_AT_STARTUP	Specification for whether or not UNV1059T alert messages (Broker responding) will be issued for initial Broker polls when Universal Enterprise Controller starts up.
CA_CERTIFICATES	UEC started task procedure ddname from which a PEM-formatted list of certificates is read.
CERTIFICATE	UEC started task procedure ddname from which a PEM-formatted certificate is read.
CERTIFICATE_REVOCATION_LIST	File name / ddname of the PEM-formatted CRL
CODE_PAGE	Code page for text translation of network data.
COMM_SESSIONS_PER_THREAD	Maximum number of UEC client sessions that can occur on each of the communications threads.
COMM_THREADS	Number of threads created to perform communications between UEC and the UEC Client Applications.
COMMIT_COMPLETE_EXPIRATION	Deletes completed commit configurations, by age.
COMMIT_INCOMPLETE_EXPIRATION	Deletes incomplete commit configurations, by age.
DELETE_EVENTS_ON_BROKER	Specification for whether or not events are deleted on the Universal Broker after they are retrieved and put into the UEC events database.
DNS_CACHE_TIMEOUT	Length of time to retain a resolved host name in memory cache.
DNS_POLLING_INTERVAL	Time interval at which the DNS cache is polled.
HOSTNAME_RETRY_COUNT	Number of times that UEC will attempt to resolve the host name of a specified Universal Broker before it ends with a connect error.
JOB_THREADS	Number of threads created to perform internal tasks in UEC.
KEEP_MONITOR_EVENTS	Specification for whether or not monitor events are written into the UEC temporary database.
LOG_MESSAGES	Specification for whether or not to log all XML message traffic between UEC and any connected applications.
LOG_MESSAGES_DIRECTORY	Directory used for UEC log messages.
LOGIN_ATTEMPTS	Number of failed login attempts allowed by a user before being disconnected by UEC.
MESSAGE_DESTINATION	Location to which messages are written.

Option Name	Description
MESSAGE_LANGUAGE	Language used for messages.
MESSAGE_LEVEL	Level of messages written.
MONITOR_EVENT_EXPIRATION	Length of time that state data is retained in the UEC database.
PERSISTENT_EVENT_EXPIRATION	Deletes event records, by age.
POLLING_INTERVAL	Time interval at which agents are polled.
PRIVATE_KEY	UEC started task procedure ddname from which a PEM-formatted private key is read.
PRIVATE_KEY_PWD	Password for the PRIVATE_KEY.
SAP_POLLING_INTERVAL	Interval (in seconds) that the SAP systems are polled for their status and job activity.
SERVICE_IP_ADDRESS	IP interface from which to accept connections.
SERVICE_PORT	Port from which to accept connections.
SSL_CIPHER_LIST	SSL cipher suite to be used for network communications.
TRACE_DIRECTORY	Directory used for UEC trace files.
TRACE_FILE_LINES	Maximum number of lines written to the trace ddname.
TRACE_TABLE	Size of the trace table.
UPDATE_INTERVAL	Time interval at which connected I-Activity Monitor clients are updated.
USER_AUTHENTICATION_METHOD	Authentication method to be used when authenticating UEC user accounts.

Table 2.3 Universal Enterprise Controller for Windows – Configuration Options

CHAPTER 3

Universal Enterprise Controller Configuration Options

3.1 Overview

This chapter provides detailed information on the configuration options available for use with the Universal Enterprise Controller (UEC).

The options are listed alphabetically, without regard to any specific operating system.

Section 3.2 Configuration Options Information provides a guideline for understanding the information presented for each option.

3.2 Configuration Options Information

For each configuration option, this chapter provides the following information.

Description

Describes the configuration option and how it is used.

Usage

Provides a table of the following information:

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	<Format / Value>					
Command Line, Long Form	<Format / Value>					
Configuration File Keyword	<Format / Value>					

Method

Identifies the different methods used to specify Universal Enterprise Controller configuration options:

- Command Line Option, Short Form
- Command Line Option, Long Form
- Configuration File Keyword

Note: Each option can be specified using one or more methods.

Syntax

Identifies the syntax of each method that can be used to specify the option:

- Format Specific characters that identify the option.
- Value Type of value(s) to be supplied for this method.

Note: If a Method is not valid for specifying the option, the Syntax field contains **n / a**.

(Operating System)

Identifies (with a ✔) the operating systems for which each method of specifying the option is valid:

- IBM i
- NonStop (HP NonStop)
- UNIX
- Windows
- z/OS

Values

Identifies all possible values for the specified value type.

Defaults are identified in **[bracketed bold type]**.

<Additional Information>

Identifies any additional information specific to the option.

3.3 Configuration Options List

Table 3.1, below, identifies the Universal Enterprise Controller configuration options.

Option Name	Description	Page
BKR_QUERIES_PER_THREAD	Maximum number of simultaneous Broker queries allowed for each thread.	45
BKR_QUERY_THREADS	Number of process threads started to initiate Broker queries during a polling cycle.	46
BKR_QUERY_TIMEOUT	Period of time within which a Broker query must finish before timing out.	47
BROKER_STATUS_ALERTS_AT_STARTUP	Specification for whether or not UNV1059T alert messages (Broker responding) will be issued for initial Broker polls when Universal Enterprise Controller starts up.	48
CA_CERTIFICATES	UEC started task procedure ddname from which a PEM-formatted list of certificates is read.	49
CERTIFICATE	UEC started task procedure ddname from which a PEM-formatted certificate is read.	50
CERTIFICATE_REVOCATION_LIST	File name / ddname of the PEM-formatted CRL	51
CODE_PAGE	Code page for text translation of network data.	52
COMM_SESSIONS_PER_THREADS	Maximum number of UEC client sessions that can occur on each of the communications threads.	54
COMM_THREADS	Number of threads created to perform communications between UEC and the Universal Enterprise Controller Client Applications.	55
COMMIT_COMPLETE_EXPIRATION	Deletes completed commit configurations, by age.	56
COMMIT_INCOMPLETE_EXPIRATION	Deletes incomplete commit configurations, by age	57
CONVERT	Converts a pre-3.2.0 database into the current database format.	58
DELETE_EVENTS_ON_BROKER	Specification for whether or not events are deleted on the Universal Broker after they are retrieved and put into the UEC events database.	59
DNS_CACHE_TIMEOUT	Length of time to retain a resolved host name in memory cache.	60
DNS_POLLING_INTERVAL	Time interval at which the DNS cache is polled.	61
HELP	Write options help to SYSPRINT ddname.	62
HOSTNAME_RETRY_COUNT	Number of times that UEC will attempt to resolve the host name of a specified Universal Broker before it ends with a connect error.	63
JOB_THREADS	Number of threads created to perform internal tasks in UEC.	64
KEEP_MONITOR_EVENTS	Specification for whether or not monitor events are written into the UEC temporary database.	65
LOG_MESSAGES	Specification for whether or not to log all XML message traffic between UEC and any connected applications.	66

Option Name	Description	Page
LOG_MESSAGES_DIRECTORY	Directory used for UEC log messages.	67
LOGIN_ATTEMPTS	Number of failed login attempts allowed by a user before being disconnected by UEC.	68
MESSAGE_DESTINATION	Location to which messages are written.	69
MESSAGE_LANGUAGE	Language used for messages.	70
MESSAGE_LEVEL	Level of messages written.	71
MONITOR_EVENT_EXPIRATION	Length of time that state data is retained in the UEC database.	72
MOUNT_POINT	z/OS UNIX directory in which the HFS or zFS data set is mounted.	74
MOUNT_POINT_MODE	z/OS UNIX access permission mode value with which the mounted database file system's root directory is set.	75
PERSISTENT_EVENT_EXPIRATION	Deletes event records, by age.	77
POLLING_INTERVAL	Time interval at which agents are polled.	79
PRIVATE_KEY	UEC started task procedure ddname from which a PEM-formatted private key is read.	80
PRIVATE_KEY_PWD	Password for the PRIVATE_KEY.	81
SAF_KEY_RING	SAF certificate key ring name.	82
SAF_KEY_RING_LABEL	SAF certificate key ring label.	83
SAP_POLLING_INTERVAL	Interval (in seconds) at which the SAP systems are polled for their status and job activity.	84
SERVICE_IP_ADDRESS	IP interface from which to accept connections.	85
SERVICE_PORT	Port from which to accept connections.	86
SSL_CIPHER_LIST	SSL cipher suite to be used for network communications.	87
SSL_IMPLEMENTATION	SSL implementation to be used for network configuration.	88
TMP_DIRECTORY	HFS directory in which Universal Enterprise Controller creates temporary files.	89
TRACE_DIRECTORY	Directory used for UEC trace files	90
TRACE_FILE_LINES	Maximum number of lines written to the trace ddname.	91
TRACE_TABLE	Size of the trace table.	92
UNIX_DB_DATA_SET	HFS or zFS data set used for UEC databases.	94
UPDATE_INTERVAL	Time interval at which connected I-Activity Monitor clients are updated.	95
USER_AUTHENTICATION_METHOD	Authentication method to be used when authenticating UEC user accounts.	96
VERSION	Writes the program version and copyright statement.	97

Table 3.1 Universal Enterprise Controller - Configuration Options

3.4 BKR_QUERIES_PER_THREAD

Description

The BKR_QUERIES_PER_THREAD option specifies the maximum number of simultaneous Broker queries allowed for each thread.

For example, if there are 4 threads and 25 queries per thread allowed, then a maximum of 100 Brokers can be queried at the same time during one polling cycle.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	bkr_queries_per_thread *count*				√	√

Values

count is the maximum number of queries allowed.

Default

Windows

[Default is *10*.]

z/OS

[Default is *25*.]

3.5 BKR_QUERY_THREADS

Description

The BKR_QUERY_THREADS option specifies the number of threads started in order to initiate broker queries during a polling cycle.

Note: One BKR_QUERY_THREADS is equivalent to one task or TCB.

z/OS

On z/OS, for each query thread, a task (TCB) is created in the UEC address space. A task is an individually dispatchable unit of work within the address space. The more tasks that exist in the address space, the more CPU and memory resources the address space consumes. The benefit of the additional tasks is that each task may execute in parallel producing a higher overall throughput of broker queries.

The throughput benefits achieved with additional tasks diminish after a certain optimum number of tasks. The optimum number depends on the hardware resources available to the operating system and the UEC address space resource configuration. A typical range is from 2 to 10 threads.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	bkr_query_threads *count*				√	√

Values

count is the number of threads started in order to initiate broker queries.

Default

Windows

[Default is *10*.]

z/OS

[Default is *4*.]

3.6 BKR_QUERY_TIMEOUT

Description

The BKR_QUERIES_TIMEOUT option specifies the time in which a broker query must finish before timing out.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	bkr_queriy_timeout *count*				√	√

Values

count is the time (in seconds) in which a broker query must finish.

[Default is *60*.]

3.7 BROKER_STATUS_ALERTS_AT_STARTUP

Description

The BROKER_STATUS_ALERTS_AT_STARTUP option specifies whether or not UNV1059T alert messages (Broker responding) will be issued for initial Broker polls when Universal Enterprise Controller starts up.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	broker_status_alerts_at_startup *option*				√	√

Values

option is the specification for whether or not UNV1059T alert messages will be issued when Universal Enterprise Controller starts up.

Valid values for *option* are:

- **yes**
  - UNV1059T alert messages will be issued on the initial poll for Brokers that are responding.
- **no**
  - UNV1059T alert messages will not be issued on the initial poll for Brokers that are responding.

In either case, UNV1056T alert messages (Unable to connect) will be issued on the initial poll for Brokers that are not responding.

[Default is no.]

3.8 CA_CERTIFICATES

Description

The CA_CERTIFICATES option specifies the PEM-formatted trusted Certificate Authority (CA) X.509 certificates file / ddname.

Trust CA certificates are required if certificate authentication and verification is desired.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-ca_certs *ddname* or *file*					√
Configuration File Keyword	ca_certificates *ddname* or *file*				√	√

Values

z/OS

ddname is the ddname of the X.509 certificates.

Windows

file is the path name of the X.509 certificates file. Relative paths are relative the current working directory.

3.9 CERTIFICATE

Description

The CERTIFICATE option specifies the file / ddname name of the PEM-formatted X.509 certificate that identifies the Universal Enterprise Controller.

UEC may use an X.509 certificate to identify itself when connecting to Universal Brokers. If a certificate is not specified by CERTIFICATE, an internal certificate is generated.

Note: If the CERTIFICATE option is used, the PRIVATE_KEY option also is required.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-cert *ddname* or *file*					√
Configuration File Keyword	certificate *ddname* or *file*				√	√

Values

z/OS

ddname is the ddname of the X.509 certificate.

Windows

file is the path name of the X.509 certificate file. Relative paths are relative to the current working directory.

3.10 CERTIFICATE_REVOCATION_LIST

Description

The CERTIFICATE_REVOCATION_LIST option specifies the file name / ddname of the PEM-formatted file containing the Certificate Revocation List (CRL) issued by the trusted Certificate Authority.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-crl *file* or *ddname*					√
Configuration File Keyword	crl *file* or *ddname*				√	√

Values

z/OS

ddname is the ddname of the file containing the CRL. The value is used only when the SSL_IMPLEMENTATION option is set to *OPENSSL*.

Windows

file is the path name of the file containing the CRL. Relative paths are relative to the current working directory.

3.11 CODE_PAGE

Description

The CODE_PAGE option specifies the character code page that is used to translate text data received and transmitted over the network.

The Universal Translate Table (UTT) files are used to translate between Unicode and the local single-byte code page.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-t *codepage*					√
Command Line, Long Form	-codepage *codepage*					√
Configuration File Keyword	codepage *codepage*				√	√

Value

codepage is the character code page that is used to translate data. It is based on its Universal Translate Table (UTT) file name (see Table 3.2).

UTT files are used to translate between Unicode and the local single-byte code page. (All UTT files end with an extension of **`.utt`**.)

Default

Windows

[Default is *ISO8859-1*.]

z/OS

[Default is *IBM1047*.]

UTT Files

Universal Translate Table (UTT) files are used to translate between Unicode and the local single-byte code page.

Operating System	UTT File Location
z/OS	UTT files are members of the PDS allocated to the Broker ddname **UNVNLS**. *codepage* specifies the member name.
Windows	UTT files are located in the **NLS** subdirectory of the installation directory. *codepage* is the base file name of the UTT file.

Table 3.2 UTT File Locations

3.12 COMM_SESSIONS_PER_THREAD

Description

The COMM_SESSIONS_PER_THREAD option specifies the maximum number of UEC client sessions that can occur on each of the communications threads (see the COMM_THREADS option).

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	comm_sessions_per_thread *count*				√	√

Value

count is the number of sessions per communications thread.

[Default is *64*.]

3.13 COMM_THREADS

Description

The COMM_THREADS option specifies the number of threads created to perform communications between UEC and the Universal Enterprise Controller Client Applications.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	comm_threads *count*				√	√

Value

count is the number of threads.

[Default is *1*.]

3.14 COMMIT_COMPLETE_EXPIRATION

Description

The COMMIT_COMPLETE_EXPIRATION option specifies the length of time that complete commit records are retained, upon which (or after which) UEC deletes them.

The minimum length of time that records are retained is one hour.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	commit_complete_expiration *time*				√	√

Value

time is the length of time that completed commit records are retained before being deleted.

Valid values for *time* are a number followed by (optionally) one of the following suffixes:

- **s** (seconds)
- **m** (minutes)
- **h** (hours)
- **d** (days)

If a suffix is not specified, the number is assumed to indicate seconds.

(For example, if **3d** is specified, the records are retained for three days before UEC deletes them.)

Note: If **0** is specified, completed commit records are not deleted.

[Default is 60d.]

3.15 COMMIT_INCOMPLETE_EXPIRATION

Description

The COMMIT_INCOMPLETE_EXPIRATION option specifies the length of time that incomplete commit records are retained, upon which (or after which) UEC deletes them.

The minimum length of time that records are retained is one hour.

Note: An incomplete commit record is a committed configuration with agents that are pending to receive the configuration changes.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	commit_incomplete_expiration *time*				√	√

Value

time is the length of time that incomplete commit records are retained before being deleted.

Valid values for *time* are a number followed by (optionally) one of the following suffixes:

- **s** (seconds)
- **m** (minutes)
- **h** (hours)
- **d** (days)

If a suffix is not specified, the number is assumed to indicate seconds.

(For example, if **3d** is specified, the records are retained for three days before UEC deletes them.)

Note: If **0** is specified, incomplete commit records are not deleted.

[Default is 90d.]

3.16 CONVERT

Description

The CONVERT option converts a pre-3.2.0 database into the current database format.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-convert					√
Configuration File Keyword	n/a					

Value

(There are no values for this option.)

3.17 DELETE_EVENTS_ON_BROKER

Description

The DELETE_EVENTS_ON_BROKER option specifies whether or not events are deleted on the Universal Broker after they are retrieved and put into the UEC events database.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	delete_events_on_broker *option*				√	√

Value

option is the specification for whether or not to delete events on the Universal Broker.

Valid values for *option* are:

- **yes**
  Delete events on the Universal Broker.
- **no**
  Do not delete events on the Universal Broker.

[Default is no.]

3.18 DNS_CACHE_TIMEOUT

Description

The DNS_CACHE_TIMEOUT option specifies the length of time (in seconds) to retain a resolved host name in DNS memory cache.

The DNS cache provides a performance enhancement in environments where the DNS system is slow to respond.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	dns_cache_timeout *seconds*				√	√

Value

seconds is the number of seconds to retain the host name in memory cache.

A value of **0** disables caching of host entries.

[Default is *360*.]

3.19 DNS_POLLING_INTERVAL

Description

The DNS_POLLING_INTERVAL option specifies the time interval (in seconds) at which the DNS cache is polled.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	dns_polling_interval *seconds*				√	√

Value

seconds is the interval (in seconds) at which the DNS cache is polled.

[Default is *120*.]

3.20 HELP

Description

The HELP option writes a description of the command options and their format.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-h					√
Command Line, Long Form	-help					√
Configuration File Keyword	n/a					

Value

(There are no values for the HELP option.)

3.21 HOSTNAME_RETRY_COUNT

Description

The HOSTNAME_RETRY_COUNT option specifies the number of times that UEC will attempt to resolve the host name of a specified Universal Broker before it ends with a connect error.

UEC will sleep for one second between resolution attempts.

Connection errors occur for several reasons. A common reason is a failure to resolve the Universal Broker host name specified with the BROKER_HOST option. This error can occur intermittently due to a temporary resource shortage or a temporary DNS problem. If your system is prone to host name resolution errors, it may help to have UEC retry the connection several times.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-hostname_retry_count *count*					√
Configuration File Keyword	hostname_retry_count *count*				√	√

Values

count is the number of times that UEC will attempt to resolve the host name.

[Default is 1.]

3.22 JOB_THREADS

Description

The JOB_THREADS option specifies the number of threads created to perform internal tasks in UEC.

These tasks can include processing for the Universal Enterprise Controller Client Applications where this value can affect the performance of client applications.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	job_threads *count*				√	√

Value

count is the number of threads.

[Default is *10*.]

3.23 KEEP_MONITOR_EVENTS

Description

The KEEP_MONITOR_EVENTS option specifies whether or not monitor events are written into the UEC temporary database.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-keep_monitor_events *option*					√
Configuration File Keyword	keep_monitor_events *option*				√	√

Values

option is the specification for whether or not to write monitor events into the database.

Valid values for *option* are:

- **yes**
  Write monitor events into the UEC temporary database.
- **no**
  Do not write monitor events into the UEC temporary database.

[Default is no.]

Note: KEEP_MONITOR_EVENTS should be set to the default value unless directed otherwise by Stonebranch, Inc. Customer Support.

3.24 LOG_MESSAGES

Description

The LOG_MESSAGES option specifies whether or not to write to a log all XML messages exchanged between UEC and any connected applications.

Note: LOG_MESSAGES is a debugging flag to be used with help from Stonebranch, Inc. Customer Support.

z/OS

Log messages are written to the UNVMSGS and UNVPRSR ddnames.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	log_messages *option*				√	√

Value

option is the specification for whether or not to write the messages.

Valid values for *option* are:

- **yes**
  Write XML message traffic to a log.
- **no**
  Do not write XML message traffic to a log.

3.25 LOG_MESSAGES_DIRECTORY

Description

The LOG_MESSAGES_DIRECTORY option specifies the directory that UEC uses for log messages.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	log_messages_directory *directory*				√	

Value

directory is the directory to use for log messages.

[Default is `c:\program files\universal\uectlr\log`.]

3.26 LOGIN_ATTEMPTS

Description

The LOGIN_ATTEMPTS option specifies the number of failed login attempts over a single connection that a user is allowed before UEC disconnects the user.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	login_attempts *count*				√	√

Values

count is the number of failed login attempts allowed.

Valid values for *count* are any number.

[Default is *3*.]

3.27 MESSAGE_DESTINATION

Description

The MESSAGE_DESTINATION option specifies the location where messages are written.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-d *destination*					√
Command Line, Long Form	-dest *destination*					√
Configuration File Keyword	message_dest *destination*				√	√

Value

destination is the location where messages are written.

Valid values for *destination* are:

z/OS

- **stderr**
  Writes the messages to the console.
  stderr is a valid value only if UEC is running as a console application.
- **logfile**
  Writes the messages to ddname **UNVLOG**.
- **system**
  Writes the messages to the console as WTO messages.

[Default for a console process is stderr.]

Windows

- **system**
  Writes the messages to the Windows Application Event Log.

3.28 MESSAGE_LANGUAGE

Description

The MESSAGE_LANGUAGE option specifies the Universal Message Catalog (UMC) that is used to format messages.

There is a message catalog for each language.

Universal Enterprise Controller message catalog member / file names start with characters **UECMC**. The first three characters of the language are used as a three-character suffix of the member / file name. All UMC catalogs have a .**UMC** extension

Note: Currently, the only message catalog provided is for English.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-L *language*					√
Command Line, Long Form	-lang *language*					√
Configuration File Keyword	language *language*				√	√

Values

language is the name of the UMC catalog.

z/OS

language translates to a member name of the library allocated on the UNVNLS DD statement.

[Default is *ENGLISH*.]

3.29 MESSAGE_LEVEL

Description

The MESSAGE_LEVEL option specifies the level of messages to write.

Usage

Method	Syntax *	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-l *level*					√
Command Line, Long Form	-level *level*					√
Configuration File Keyword	message_level *level*				√	√

Values

level is the level of messages to write.

Valid values for *level* are:

- **trace**
  Writes trace messages used for diagnostic purposes.
  Note: Use **trace** only as directed by Stonebranch, Inc. Customer Support.
- **audit**
  Writes audit, informational, warning, and error messages.
- **info**
  Writes informational, warning, and error messages.
- **warn**
  Writes warning and error messages.
- **error**
  Writes error messages only.

[Default is info.]

3.30 MONITOR_EVENT_EXPIRATION

Description

The MONITOR_EVENT_EXPIRATION option specifies the length of time that state data is retained in the UEC database.

State data refers to data collected and generated by UEC that is used to represent the work and working state of Stonebranch Solutions at a point in time. Collected data includes monitor-routed UES events and Stonebranch Solutions component state data.

Each state data record is associated with a particular Stonebranch Solutions workflow. While the workflow is active, some component of the workflow is generating state data. State data is aged and expired at the workflow level.

All records associated with a workflow are considered to be as old as the last update performed for the workflow. Therefore, when a clean-up cycle occurs, and no state data activity has occurred on a workflow for at least the length of time specified by MONITOR_EVENT_EXPIRATION, all records associated with the workflow are removed from the database.

State data clean-up cycles occur once every hour. Therefore, the minimum length of time that state data is retained is one hour.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	monitor_event_expiration *time*				√	√

Values

time is the length of time that event records are retained before being deleted.

Valid values for *time* are a number followed by (optionally) one of the following suffixes:

- **s** (seconds)
- **m** (minutes)
- **h** (hours)
- **d** (days)

If a suffix is not specified, the number is assumed to indicate seconds.

(For example, if **3d** is specified, the records are retained for three days before UEC deletes them.)

[Default is 24h.]

3.31 MOUNT_POINT

Description

The MOUNT_POINT option specifies the z/OS UNIX directory in which the HFS or zFS data set is mounted.

An HFS data set is specified either by the UNIX_DB_DATA_SET option or the **UNVDB** ddname.

A zFS data set is specified only by the UNIX_DB_DATA_SET option. A zFS data set name cannot be specified by ddname.

The actual mount point will be a subdirectory named after the HFS or zFS data set name being mounted.

If the mount point does not exist, it is created by UEC.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-mount_point *directory*					√
Configuration File Keyword	mount_point *directory*					√

Values

directory is the z/OS UNIX directory in which the HFS or zFS data set is mounted.

[Default is */tmp*.]

Note: The HFS z/OS UNIX permission mode is set to *dir*.

3.32 MOUNT_POINT_MODE

Description

The MOUNT_POINT option specifies the z/OS UNIX access permission mode value with which the mounted database file system's root directory is set.

The z/OS UNIX file system is initialized only if the file **`.inited`** is not found in the root directory. When initialization is performed once, **`.inited`** is created; initialization will not be performed again.

If you need to customize the directory ownership or permissions, define the file **`.inited`** in the file system's root directory; UEC will not perform its initialization.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-mount_point_mode *mode*					√
Configuration File Keyword	mount_point_mode *mode*					√

Values

mode is the z/OS UNIX permission mode value, which is a sum of the permission modes to be granted.

Table 3.3, below, describes each mode.

Mode	Description
100	User execute permission
200	User write permission
400	User read permission
010	Group execute permission
020	Group write permission
040	Group read permission
001	Other execute permission
002	Other write permission
004	Other read permission

Table 3.3 z/OS UNIX Access Permission Modes

The format of *mode* is the same as the “change mode” USS command **chmod**. It is an octal number that specifies the permission mode value corresponding to the user, group, and other permission mode fields.

(Refer to the IBM *UNIX System Services Command Reference* for complete details on the **chmod** command.)

Default is *750*, which specifies:

- **Read-write-execute access for the user**
- **Read-execute access for the group**
- **No access for other**

3.33 PERSISTENT_EVENT_EXPIRATION

Description

The PERSISTENT_EVENT_EXPIRATION option specifies the length of time that persistent event records are retained in the UEC database.

Persistent event data refers to data collected and generated by UEC from the Universal Broker on remote platforms. This data is used to represent a sequence of events that have occurred over a period of time. Collected data includes persistent-routed UES events. This commonly is referred to as Universal Event Subsystem data.

The minimum length of time that records are retained is one hour.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	persistent_event_expiration *time*				√	√

Value

time is the length of time that persistent event records are retained before being deleted.

Valid values for *time* are a number followed by (optionally) one of the following suffixes:

- **s** (seconds)
- **m** (minutes)
- **h** (hours)
- **d** (days)

If a suffix is not specified, the number is assumed to indicate seconds.

(For example, if **3d** is specified, the records are retained for three days before UEC deletes them.)

Note: If **0** is specified, persistent event records are not deleted.

[Default is 60d.]

3.34 POLLING_INTERVAL

Description

The POLLING_INTERVAL option specifies the time interval (in seconds) at which the agents in the UEC agent list are polled.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	polling_interval *seconds*				√	√

Value

seconds is the interval (in seconds) at which the agents are polled.

Valid values for *seconds* is any number.

[Default is *120*.]

If your agent list is large, you may want to increase this default interval.

Note: POLLING_INTERVAL should not be set to a value lower than the number of agents divided by BKR_QUERIES_PER_THREAD **x** BKR_QUERY_THREADS. While doing so will not cause any harm to UEC, it will prevent UEC from operating as efficiently as possible.

3.35 PRIVATE_KEY

Description

The PRIVATE_KEY option specifies the location of the PEM-formatted private key that corresponds to the X.509 certificate specified by the CERTIFICATE option.

Note: PRIVATE_KEY is required only if a certificate is specified by CERTIFICATE.

Usage

Method	Syntax *	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-private_key *ddname*					√
Configuration File Keyword	private_key *ddname* or *file*				√	√

Values

z/OS

ddname is the ddname from which the PEM-formatted private key is read.

Windows

file is the full path name of the file from which the PEM-formatted private key is read.

3.36 PRIVATE_KEY_PWD

Description

The PRIVATE_KEY_PWD option specifies the password for the PEM-formatted private key specified with the PRIVATE_KEY option.

Note: Whether or not the password is required depends on whether or not it is required by the private key.

Usage

Method	Syntax *	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-private_key_pwd *password*					√
Configuration File Keyword	private_key_password *password*				√	√

Values

password is the password for the private key.

3.37 SAF_KEY_RING

Description

The SAF_KEY_RING option specifies the name of the SAF key ring that a UEC will use as its X.509 certificate, if Universal Broker requires the UEC to provide an X.509 certificate to identify itself to the Broker.

Note: SAF_KEY_RING is required if the SSL_IMPLEMENTATION option is set to *SYSTEM*.

Usage

Method	Syntax *	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-saf_key_ring *name*					√
Configuration File Keyword	saf_key_ring *name*					√

Values

name is the name of the SAF certificate key ring.

3.38 SAF_KEY_RING_LABEL

Description

The SAF_KEY_RING_LABEL option specifies the label of the certificate in the SAF certificate key ring.

(The key ring is specified by the SAF_KEY_RING option.)

Usage

Method	Syntax *	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-saf_key_ring_label *label*					√
Configuration File Keyword	saf_key_ring_label *label*					√

Values

label is the label of the SAF certificate key ring.

[Default is the default certificate in the key ring.]

3.39 SAP_POLLING_INTERVAL

Description

The SAP_POLLING_INTERVAL option specifies the interval (in seconds) at which the SAP systems are polled for their status and job activity.

Usage

Method	Syntax *	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	sap_polling_interval *interval*				√	√

Values

interval is the interval (in seconds) at which the SAP systems are polled for their status and job activity.

{Default is 120.]

3.40 SERVICE_IP_ADDRESS

Description

The SERVICE_IP_ADDRESS option specifies the IP interface on which to accept network connection requests.

SERVICE_IP_ADDRESS is useful only if the system has multiple IP interfaces.

If the system has multiple interfaces and SERVICE_IP_ADDRESS is not used, connection requests are accepted on all interfaces defined on the system.

If the system has only one interface, do not use SERVICE_IP_ADDRESS.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-i *ipaddress*					√
Command Line, Long Form	-svcipaddr *ipaddress*					√
Configuration File Keyword	service_ip_address *ipaddress*				√	√

Values

ipaddress is the IP address on which to accept network connection requests.

Valid values for *ipaddress* are:

- Dotted numeric format (for example, **20.30.40.50**)
- Domain name format (for example, **myinterface**).

Note: An asterisk (*) specifies all interfaces.

z/OS

[Default is * .]

3.41 SERVICE_PORT

Description

The SERVICE_PORT option specifies the IP port on which to accept network connection requests.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-p *port*					√
Command Line, Long Form	-svcport *port*					√
Configuration File Keyword	service_port *port*				√	√

Values

port is the IP port on which to accept network connection requests.

Valid values for *port* are:

- Numeric value (for example, **7000**)
- Service name (for example, **uectlr**)

[Default is *8778*.]

Note: It is recommended that the default value be used, if possible.

3.42 SSL_CIPHER_LIST

Description

The SSL_CIPHER_LIST option specifies one or more SSL cipher suites that are acceptable to use for network communications between UEC components.

Usage

Method Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-ssl_cipher_list *cipherlist*					√
Configuration File Keyword	ssl_cipher_list *cipherlist*				√	√

Values

cipherlist is a comma-separated list of SSL cipher suites. The list should be ordered with the most preferred suite first and the least preferred suite last.

Table 3.4 identifies the list of SSL cipher suites supported for this option.

Cipher Suite	Description
RC4-SHA	128-bit RC4 encryption and SHA-1 message digest
RC4-MD5	128-bit RC4 encryption and MD5 message digest
AES256-SHA	256-bit AES encryption and SHA-1 message digest
AES128-SHA	128-bit AES encryption and SHA-1 message digest
DES-CBC3-SHA	128-bit Triple-DES encryption and SHA-1 message digest
DES-CBC-SHA	128-bit DES encryption and SHA-1 message digest

Table 3.4 SSL Cipher Suites (for CTL_SSL_CIPHER_LIST)

[Default is RC4-SHA,RC4-MD5,AES256-SHA,AES128-SHA,DES-CBC3-SHA, DES-CBC-SHA.]

3.43 SSL_IMPLEMENTATION

Description

The SSL_IMPLEMENTATION option specifies the Secure Socket Layer (SSL) implementation to be used for network communications.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-ssl_implementation *option*					√
Configuration File Keyword	ssl_implementation *option*					√

Values

option is the SSL implementation to be used.

Valid values for option are:

- **openssl**
  OpenSSL SSL library is used for the SSL protocol.
- **system**
  z/OS System SSL library is used for the SSL protocol. The z/OS System SSL library has installation and configuration prerequisites. (See the Stonebranch Solutions 4.2.0 Installation Guide for a description of the prerequisites before using System SSL.)

[Default is openssl.]

3.44 TMP_DIRECTORY

Description

The TMP_DIRECTORY option specifies the HFS directory in which Universal Enterprise Controller creates temporary files.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	tmp_directory *directory*					✔

Values

directory is the name of the directory for temporary files. A fully qualified path name must be specified.

[Default is `tmp_directory/tmp`.]

3.45 TRACE_DIRECTORY

Description

The TRACE_DIRECTORY option specifies the directory that the Universal Enterprise Controller uses for trace files.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	trace_directory *directory*				√	

Values

directory is the name of the directory for trace files.

[Default is `c:\Program Files\Universal\uectlr`.]

3.46 TRACE_FILE_LINES

Description

The TRACE_FILE_LINES option specifies the maximum number of lines to write to the trace file.

A trace file is generated when the MESSAGE_LEVEL option is set to *TRACE*. The trace file will wrap around when the maximum number of lines has been reached and start writing trace entries after the trace header lines.

(The average size of a trace file line is 50 characters.)

z/OS

The trace file is written to ddname UNVTRACE. However, TRACE_FILE_LINES has no effect if ddname UNVTRACE has allocated a JES SYSOUT file.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-tracefilelines *lines*					√
Configuration File Keyword	trace_file_lines *lines*				√	√

Values

lines is the maximum number of lines to write to the trace file.

[Default is 50,000.]

3.47 TRACE_TABLE

Description

The TRACE_TABLE option specifies the size of a wrap-around trace table maintained in memory.

The trace table is written to a file / data set when the program ends under the conditions specified in this option. Tracing is activated, and a trace file is generated, when the MESSAGE_LEVEL option is set to *TRACE*.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	trace_table *size, condition*				√	√

Values

size is the size (in bytes) of the trace table.

The size can be suffixed with either of the following characters:

- **M** indicates that the size is specified in megabytes
- **K** indicates that the size is specified in kilobytes

For example, **50M** indicates that 50 X 1,048,576 bytes of memory is allocated for the trace table.

Note: If *size* is **0**, the trace table is not used.

[Default is *0*.]

condition is the condition under which the trace table is written.

Possible values for *condition* are:

- **error**
  Write the trace table if the program ends with a non-zero exit code.
- **always**
  Write the trace table when the program ends regardless of the exit code.
- **never**
  Never write the trace table.

[Default is *never*.]

3.48 UNIX_DB_DATA_SET

Description

The UNIX_DB_DATA_SET option specifies the HFS or zFS data set used for the UEC databases. The data set can be mounted prior to starting UEC. If not, UEC will mount the data set at a specified mount point derived from the MOUNT_POINT option.

UNIX_DB_DATA_SET is the only way to specify a zFS data set. HFS data sets can be allocated in UEC's started task procedure as ddname **UNVDB**. zFS data sets cannot be allocated on a ddname.

Note: When using a zFS data set, the **UNVDB** ddname statement in UEC's started task procedure should be removed.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-unix_db_data_set *DSN*					√
Configuration File Keyword	unix_db_data_set *DSN*					√

Values

DSN is the HFS or zFS data set used for the databases.

3.49 UPDATE_INTERVAL

Description

The UPDATE_INTERVAL option specifies the time interval (in seconds) at which connected I-Activity Monitor clients are updated.

When a change is made to the broker or group lists through the I-Administrator application, the change will not be committed until the end of the specified interval. If additional changes are made within that interval, all changes made during the interval will be committed at the same time.

When the changes are committed, all connected I-Activity Monitor clients will be updated with the new information. This will minimize message traffic to existing I-Activity Monitor clients during mass I-Administrator updates.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	update_interval *seconds*				√	√

Values

seconds is the time interval at which clients are updated.

[Default is *120*.]

3.50 USER_AUTHENTICATION_METHOD

Description

The USER_AUTHENTICATION_METHOD option specifies the authentication method to be used when authenticating UEC user accounts.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	n/a					
Configuration File Keyword	user_auathentication_method *method*				√	√

Values

method is the authentication method to be used.

Valid values for *method* are:

- **uec**
  Use UEC authentication only
- **os**
  Use the native operating system authentication method where UEC is running.
- **uec**,**OS**
  Use both UEC authentication and native operating system authentication

[Default is *UEC, OS*.]

3.51 VERSION

Description

The VERSION option instructs UEC to write program version and copyright information.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-v					√
Command Line, Long Form	-version					√
Configuration File Keyword	n/a					

Value

(There are no values for this option.)

CHAPTER 4

Universal Event Subsystem

4.1 Overview

The Universal Event Subsystem (UES) is a subsystem of Universal Enterprise Controller (UEC).

UES records, routes, and manages event messages generated by Stonebranch Solutions components.

The event messages are generated whenever a Stonebranch Solutions component performs an action that impacts the computing environment on which it executes.

4.2 Event Messages

An event message contains information that identifies:

- Source of the event
- Data relating to the event itself

Event messages are collected by Universal Brokers from components that run local to the Brokers. UEC, in turn, collects the event messages from the Brokers. UEC stores the collected event messages into a database for long-term management and access.

4.2.1 Examples

Examples of event messages include:

- Universal Command Server starts a user job, which may be a command, script, or other form of work.
- Universal Broker denies access to a client due to a Universal Access Control List (UACL) denial.
- Universal Data Mover Manager transfers a file from one server to another.

4.2.2 Universal Broker Event Message Processing

Stonebranch Solutions components generate event messages and route them to a Universal Broker running on the same system; that is, the local Universal Broker. The Broker receives the event messages and records them into a local UES database.

Event messages are recorded in the order in which they are received by the Broker. This order is maintained throughout the subsystem.

Note: This order is based on the time that the Broker records the event, not the time that the component generates the event.

The Broker UES database maintains the event messages generated by local Stonebranch Solutions components. The Broker can be stopped and restarted with no loss of event messages. The event messages remain in the database until the Broker deletes them.

4.3 Universal Event Subsystem Activation

Universal Event Subsystem (ES) is not activated by default.

In order to generate and capture event messages, each Stonebranch Solutions component that is able to generate event messages has an EVENT_GENERATION option. This option controls which event message types to generate.

By default, EVENT_GENERATION is set so that no event message types are generated. The value must be set so that event messages of interest are generated by the component.

4.3.1 UES Database Clean-up

The UES database continues to accumulate event messages until the Broker deletes them.

Event messages are deleted based upon two criteria:

1. Event message expires.
2. Event message is delivered to a Universal Enterprise Controller that requested delete access to event messages.

Event message expiration is controlled with the EVENT_EXPIRATION option. This option specifies the number of seconds that an event message should remain in the UES database before it is eligible for deletion. Each event message contains the time that it was recorded in the database. The Broker considers an event message expired if the difference between the current time and the recorded time is greater than the EVENT_EXPIRATION value.

The consequences of this using this method for determining whether or nor an event message is expired is that if the value of EVENT_EXPIRATION is increased or decreased, the life of all recorded event messages is increased or decreased as well.

4.3.2 UES Database Access

A Broker provides UES database access to Universal Enterprise Controller (UEC). UEC sends a request to a Broker asking for the latest event messages. The Broker responds with event messages that satisfy the UEC request.

The Universal Access Control List (UACL) entries EVENT_READ and EVENT_DELETE control read and delete access, respectively, to the UES database.

The default EVENT_READ rule allows read access. The default EVENT_DELETE rule denies access. These UACL defaults allow any UEC read access to event messages while denying all UECs delete access to event messages.

An event message becomes eligible for deletion from the Broker UES database once it has been delivered to a UEC that requested delete access. There should be one UEC designated as the production UEC responsible for maintaining the central UES database for all Brokers. This one production UEC should be given delete access on each Broker.

CHAPTER 5

UECLoad Utility

5.1 Overview

This chapter provides information on the UECLoad utility specific to the z/OS and Windows operating systems.

UECLoad provides the user with a command line interface to add, delete, view, and export data from the Universal Enterprise Controller database tables.

5.2 Usage

UECLoad executes as a command line application.

Through the use of UECLoad, the user can:

- Add, delete, list, or export individual Agent definitions.
- Provide an Agent definition file to add, delete, list, or export multiple Agents.
- Delete, list, or export the currently defined Agents in the UEC database.
- Export Universal Event Subsystem events, with the option to delete them from UEC.

This section describes the configuration, configuration options, and command line syntax of UECLoad.

5.2.1 UECLoad for z/OS

This section identifies the following information for UECLoad for z/OS:

- JCL
- DD Statements used in JCL

JCL

Figure 5.1, below, illustrates the JCL required to execute UECLoad for z/OS.

```
//STEP1    EXEC PGM=UECLOAD,PARM='ENVAR(TZ=EST5EDT)/'
//STEPLIB  DD  DISP=SHR,DSN=#SHLQ.UNV.SUNVLOAD
//*
//UNVCONF  DD  DISP=SHR,DSN=#PHLQ.UNV.UNVCONF(UECCFG00)
//*
//UNVTRACE DD  SYSOUT=*
//SYSPRINT DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//CEEDUMP  DD  SYSOUT=*
//*
//LOAD     DD  *
<BROKERDEF>
  broker_name   unxprod
  broker_host   prd-unix
  broker_port   7887
</BROKERDEF>
<BROKERDEF>
  broker_name   unxtest
  broker_host   tst-unix
  broker_port   7887
</BROKERDEF>
<BROKERDEF>
  broker_name   unxdev
  broker_host   dev-unix
  broker_port   7887
</BROKERDEF>
/*
//*
//USER     DD  *
-u admin -w admin
/*
//*
//SYSIN    DD  *
 -add -deffile load -f user
```

Figure 5.1 Universal UECLoad for z/OS – JCL

DD Statements used in JCL

Table 5.1, below, describes the DD statements used in the UECLoad for z/OS JCL illustrated in Figure 5.1.

ddname	DCB Attributes	Mode	Description
STEPLIB	DSORG=PO, RECFM=U	input	Stonebranch Solutions load library containing the program being executed.
UNVCONF	DSORG=PS, RECFM=(F, FB, V, VB)	input	UEC configuration member.
UNVTRACE	DSORG=PO, RECFM=(F, FB, V, VB), LRECL=256 or above.	output	UECLoad trace output.
SYSPRINT	DSORG=PS, RECFM=(F, FB, V, VB)	output	Standard output file for the UECLoad program.
SYSOUT	DSORG=PS, RECFM=(F, FB, V, VB)	output	Standard error file for the UECLoad program.
SYSIN	DSORG=PS, RECFM=(F, FB, V, VB)	input	Standard input file for the UECLoad program.

Table 5.1 UECLoad for z/OS – DD Statements in JCL

5.2.2 Configuration

Configuration consists of:

- Setting default options and preferences for all executions of UECLoad.
- Setting options and preferences for a single execution of UECLoad.

Configuration options are read from the following sources:

1. Command line
2. Command file
3. Environment variables
4. Definition file

The order of precedence is the same as the list above; command line being the highest, and definition file being the lowest. That is, options specified via a command line override options specified via a command file, and so on.

5.2.3 Configuration Options

This section describes the configuration options used to execute UECLoad.

Configuration Options Categories

Table 5.2, below, categorizes the configuration options into logical areas of application.

Category	Description
Action	Action being taken on the specified Agent definition.
Definitions	Definition of the Agent being modified in the UEC database.
Events	Options available when using the action –export EVENTS
Host	UEC connection options.
Miscellaneous	Options used to display command help and program versions.
Options	Alternative methods to specify command options.
User	User account that UECLoad executes with in UEC.

Table 5.2 UECLoad Utility - Configuration Option Categories

The UECLoad options for each category are summarized in the following tables. Each **Option Name** is a link to detailed information about that option in Chapter 6 UECLoad Configuration Options.

Action Category Options

Option Name	Description
ADD	Specification to add Agent definitions to UEC or to specified group(s) if the GROUPS option is used on the command line.
DELETE	Specification to delete Agent definitions from UEC or from specified group(s) if the GROUPS options is used on the command line.
EXPORT	Specification to output the described agent definitions in a format to be used by an Agent definition file.
LIST	Specification to output the described Agent definitions in a user-friendly format.

Definitions Category Options

Option Name	Description
BROKER_DESCRIPTION	Description of the defined Universal Broker.
BROKER_HOST	TCP/IP host name of the defined Universal Broker.
BROKER_NAME	Unique name of the defined Universal Broker.
BROKER_PORT	TCP/IP port number of the defined Universal Broker.
GROUPS	Group(s) in which the defined Universal Broker is a member. When this option is used on the command line with the ADD or DELETE option, the Universal Broker(s) will be added or deleted to the Group(s).

Events Category Options

Option Name	Description
ARCFILE	Archived file to retrieve for export.
END_TIME	End time of exported data.
EXPORT_DELETE	Delete records in Events database.
FORMAT	Output format of event report (formats supported are CSV, XML, and ARC).
START_TIME	Start time of exported data.

Host Category Options

Option Name	Description
UEC_PORT	TCP/IP port number of UEC.

Miscellaneous Category Options

Option Name	Description
HELP	Write command option help.
VERSION	Write program version.

Options Category Options

Option Name	Description
BROKER_DEFFILE	File containing multiple Broker definitions to be added or deleted in the UEC database.
CODE_PAGE	Code page used for text translation.
COMMAND_FILE_ENCRYPTED	Encrypted command file.
COMMAND_FILE_PLAIN	Plain text command file.
ENCRYPTION_KEY	Encryption key used to decrypt an encrypted command file specified by option COMMAND_FILE_ENCRYPTED.
MESSAGE_LEVEL	Level of messages written.

User Category Options

Option Name	Description
USER_ID	UEC user ID or account with which brokers will be modified.
USER_PASSWORD	Password associated with USER_ID.

5.2.4 Command Line Syntax

Figure 5.2, below, illustrates the syntax – using the long form of command line options – of the UECLoad utility.

```
uecload
{-add | -delete | -list | -export [EVENTS] }
[-userid user [-pwd pwd] ]
[-port port]
[-broker_desc description]
[-broker_host address]
[-broker_name name]
[-broker_port port]
[-groups grouplist]
[-arcfile filename]
[-codepage codepage]
[-level {trace|audit|info|warn|error} ]
[-deffile filename]
[-file ddname / filename | -encryptedfile ddname / filename  [-key key] ]
[-format [XML|CVS|ARC] ]
[-export_delete]
[-stime startdate [,starttime] ]
[-etime enddate [,endtime] ]

uecload
{-help | -version}
```

Figure 5.2 UECLoad Utility - Command Line Syntax

For a description of the UECLoad configuration options, see Chapter 6 UECLoad Configuration Options.

CHAPTER 6

UECLoad Configuration Options

6.1 Overview

This chapter provides detailed information on the configuration options available for use with the UECLoad utility. Section 6.2 Configuration Options Information provides a guideline for understanding the information presented for each option.

The options are listed alphabetically, without regard to any specific operating system.

Information on how these options are used is documented in Chapter 5 UECLoad Utility.

6.2 Configuration Options Information

For each configuration option, this chapter provides the following information.

Description

Describes the configuration option and how it is used.

Usage

Provides a table of the following information:

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	<Format / Value>					
Command Line, Long Form	<Format / Value>					
Environment Variable	<Format / Value>					
Definition File Keyword	<Format / Value>					

Method

Identifies the different methods used to specify UECLoad configuration options:

- Command Line Option, Short Form
- Command Line Option, Long Form
- Environment Variable
- Definition File Keyword

Note: Each option can be specified using one or more methods.

Syntax

Identifies the syntax of each method that can be used to specify the option:

- Format Specific characters that identify the option.
- Value Type of value(s) to be supplied for this method.

Note: If a Method is not valid for specifying the option, the Syntax field contains **n / a**.

(Operating System)

Identifies (with a ✔) the operating systems for which each method of specifying the option is valid:

- IBM i
- NonStop (HP NonStop)
- UNIX
- Windows
- z/OS

Values

Identifies all possible values for the specified value type.

Defaults are identified in **[bracketed bold type]**.

<Additional Information>

Identifies any additional information specific to the option.

6.3 Configuration Options List

Table 6.1, below, identifies all UECLoad configuration options.

Option	Description	Page
ADD	Specification to add Agent definitions to UEC or to specified group(s) if the GROUPS option is used on the command line.	115
ARCFILE	Archived file to retrieve for export.	116
BROKER_DEFFILE	File containing multiple broker definitions to be added or deleted in the UEC database.	117
BROKER_DESCRIPTION	Description of the defined Universal Broker.	118
BROKER_HOST	TCP/IP host name of the defined Universal Broker.	119
BROKER_NAME	Unique name of the defined Universal Broker.	120
BROKER_PORT	TCP/IP port number of the defined Universal Broker.	121
CODE_PAGE	Code page used for text translation.	122
COMMAND_FILE_ENCRYPTED	Encrypted command file.	123
COMMAND_FILE_PLAIN	Plain text command file.	124
DELETE	Specification to delete Agent definitions from UEC or from specified group(s) if the GROUPS options is used on the command line.	125
ENCRYPTION_KEY	Encryption key used to decrypt an encrypted command file specified by COMMAND_FILE_ENCRYPTED.	126
END_TIME	End time of exported data	127
EXPORT	Specification to output the described broker definition in a format to be used by a broker definition file.	128
EXPORT_DELETE	Specification that the exported records from the UEC events database table are to be deleted upon –export EVENTS action	129
FORMAT	Format of the output from the -export EVENTS action	130
GROUPS	Group(s) in which the defined Universal Broker is a member. When this option is used on the command line with the ADD or DELETE option, the Universal Broker(s) will be added or deleted to the Group(s).	131
HELP	Write command option help.	134
LIST	Specification to output the described broker definition in a user-friendly format.	135
MESSAGE_LEVEL	Level of messages written.	136
START_TIME	Start time of exported data	138
UEC_PORT	TCP/IP port number of the UEC.	139
USER_ID	UEC user ID or account with which brokers will be modified.	140
USER_PASSWORD	Password associated with USER_ID.	141
VERSION	Write program version.	142

Table 6.1 UECLoad Configuration Options

6.4 ADD

Description

The ADD option specifies that the action being taken is to add Agent definitions to UEC or to specified group(s) if the GROUPS option is used on the command line.

Valid actions are ADD, DELETE, EXPORT, and LIST. Only one action can be specified at any one time.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-add				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

(There are no values associated with ADD.)

6.5 ARCFILE

Description

The ARCFILE option specifies the name of an archived file to retrieve for export.

Retrieval of archived data will export data directly into CSV or XML format.

Note: If ARCFILE is used, the UEC_PORT, USER_ID, and USER_PASSWORD options are ignored, since no connection is made to the UEC for this operation.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-arcfile *filename*				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

filename is the name of the file to retrieve.

6.6 BROKER_DEFFILE

Description

The BROKER_DEFFILE option specifies the Broker definition file (**`deffile`**).

The **`deffile`** is used to specify multiple Broker definitions to be added or deleted to the UEC.

If used with the EXPORT option, the definition file is created with the results of the export action.

BROKER_DEFFILE is not valid for use with the LIST option.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-deffile *filename*				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

filename is the name of the definition file.

6.7 BROKER_DESCRIPTION

Description

The BROKER_DESCRIPTION option specifies a description of the Broker being added or deleted in the UEC database.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-broker_desc *description*				√	√
Environment Variable	UECLBROKERDESC=*description*				√	√
Definition File Keyword	broker_desc *description*				√	√

Values

description is the description of the Broker being added or deleted.

Note: Since *description* can contain spaces, it should be enclosed in double (**"**) quotation marks.

6.8 BROKER_HOST

Description

The BROKER_HOST option specifies the host network address of the Broker being added, deleted, or viewed in the UEC database.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-broker_host *address*				√	√
Environment Variable	UECLBROKERHOST=*address*				√	√
Definition File Keyword	broker_host *address*				√	√

Values

address is the host network address of the Broker.

address can be specified in either of the following formats:

- Dotted format (1.2.3.4)
- Host domain name

If BROKER_HOST is used with the LIST or EXPORT option, *address* can contain wildcards (for example, **`1.2.3.*`** or **`host1*`**). In these examples, all broker host addresses that begin with **`1.2.3`** or **`host1`**, respectively, would be matched.

6.9 BROKER_NAME

Description

The BROKER_NAME option specifies the unique name of a Broker being added, deleted, or viewed in the UEC database.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-broker_name *name*				√	√
Environment Variable	UECLBROKERNAME=*name*				√	√
Definition File Keyword	broker_name *name*				√	√

Values

name is the name of the Broker.

If BROKER_NAME is used with the LIST or EXPORT option, *name* can contain wildcards (for example, **`broker*`**). In this example, all broker names that begin with **`broker1`** would be matched.

6.10 BROKER_PORT

Description

The BROKER_PORT option specifies the TCP/IP port of the Broker being added, deleted, or viewed in the UEC database.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-broker_port *port*				√	√
Environment Variable	UECLBROKERPORT=*port*					
Definition File Keyword	broker_port *port*					

Values

port is the TCP/IP port of the Broker.

port can be specified in either of the following formats:

- Number (for example, *7887*)
- Service name (for example, **ubroker**)

6.11 CODE_PAGE

Description

The CODE_PAGE option specifies the character code page that is used to translate text data received and transmitted over the network.

The Universal Translate Table (UTT) files are used to translate between Unicode and the local single-byte code page.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-t *codepage*				√	√
Command Line, Long Form	-codepage *codepage*				√	√
Environment Variable	UECLDCODEPAGE=*codepage*				√	√
Definition File Keyword	n/a					

Values

codepage is the character code page that is used to translate data.

codepage references a Universal Translate Table (UTT) file provided with the product (see Section 7.3 UTT Files for information on UTT files). UTT files are used to translate between Unicode and the local single-byte code page. (All UTT files end with an extension of **`.utt`**.)

[Default

The default code page is different for different operating systems:

- **ISO8859-1 (8-bit ASCII) ASCII-based operating systems**
- **IBM1047 (EBCDIC) EBCDIC-based operating system]**

See Section 7.2 Character Code Pages for a complete list of character code pages provided by Stonebranch Inc. for use with Stonebranch Solutions.

6.12 COMMAND_FILE_ENCRYPTED

Description

The COMMAND_FILE_ENCRYPTED option specifies the ddname / file name of a data set / file containing encrypted values for command line option parameters.

Command files specify an additional source of command line options. Storing options in a file can be used in situations where it is not desirable to explicitly specify them on the command line. The options read from the file are processed exactly like options specified on the command line. The options must be in their respective command line formats.

UECLoad can process command files that are either encrypted or in plain text (see the COMMAND_FILE_PLAIN option). Encrypted command files are an excellent place to store sensitive data such as user IDs and passwords. Command files (encrypted or not) that contain sensitive data should be protected from unauthorized read access with a security system, such as RACF.

Use the Universal Encrypt utility provided with Universal Command to encrypt a plain text command file. (For information on Universal Encrypt, see the Stonebranch Solutions Utilities 4.2.0 Reference Guide). If a key was used to encrypt the file, the same key must be supplied using the ENCRYPTION_KEY option.

Note: If a data set / file is specified in this option, it should not be specified additionally in the COMMAND_FILE_PLAIN option. If it is, the data set / file specified in COMMAND_FILE_PLAIN will be used.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-x *ddname* or *filename*				√	√
Command Line, Long Form	-encryptedfile *ddname* or *filename*				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

filename is the name of the file containing the encrypted command parameter values.

6.13 COMMAND_FILE_PLAIN

Description

The COMMAND_FILE_PLAIN option specifies the ddname / file name of a data set / file containing plain text values for command line option parameters.

Command files specify an additional source of command line options. Storing options in a file can be used in situations where it is not desirable to explicitly specify them on the command line. The options read from the file are processed exactly like options specified on the command line. The options must be in their respective command line formats.

UECLoad can process command files that are either in plain text or encrypted (see the COMMAND_FILE_ENCRYPTED option). It is strongly recommended that plain text files be further protected from unauthorized access using a native operating system security method, such as RACF.

Note: If a data set / file is specified in this option, it should not be specified additionally in the COMMAND_FILE_ENCRYPTED option. If it is, the data set / file specified in COMMAND_FILE_PLAIN will be used.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-f *ddname* or *filename*				√	√
Command Line, Long Form	-file *ddname* or *filename*				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

filename is the ddname / file name of the data set / file containing the parameters and their values.

6.14 DELETE

Description

The DELETE option specifies that the action being taken is to delete Agent definitions from UEC or from specified group(s) if the GROUPS options is used on the command line.

Valid actions are ADD, DELETE, EXPORT, and LIST. Only one action can be specified at any one time.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-delete				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

(There are no values associated with DELETE.)

6.15 ENCRYPTION_KEY

Description

The ENCRYPTION_KEY option specifies the key used to encrypt the command file specified by the COMMAND_FILE_ENCRYPTED option.

This key acts much like a password for the encrypted command file in that it can be used to protect the file from decryption by unauthorized users.

If a key was used to encrypt a command file (when Universal Encrypt was run), that same key must be specified to decrypt the file, or the decryption will fail. If no key is specified, the default key is used.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-K *key*				√	√
Command Line, Long Form	-key *key*				√	√
Environment Variable	UCMDKEY=*key*					
Definition File Keyword	n/a					

Values

key is the key used to encrypt the command file.

6.16 END_TIME

Description

The END_TIME option specifies the ending date and time selection criteria of the export of the UEC events database table.

Note: END_TIME is required when the –export EVENTS action is used (see Section 6.17 EXPORT).

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-e *enddate*[,*endtime*]				√	√
Command Line, Long Form	-etime *enddate*[,*endtime*]				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

enddate must be specified in the following format: YYYY/MM/DD

endtime must be specified in the following format: HH:MM:SS

Upon export, event records can be selected by using an asterisk (*****) for the *enddate*.

A rolling date can be specified with an asterisk (*****) followed by a negative value (for example, ***-2** selects records that were generated prior to two days before the current date). If *endtime* is not specified, a value of *23:59:59* is used.

6.17 EXPORT

Description

The EXPORT option specifies that the action being taken is the export of a UEC database. By default, EXPORT outputs the UEC broker definitions in a format that can be used at a later time as a broker definition file.

Note: Valid actions are ADD, DELETE, EXPORT, and LIST. Only one action can be specified at any one time.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-export [*EVENTS*]				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

EVENTS specifies that the events database table from UEC is exported.

The format of the output is either **XML**, **CSV**, or **ARC** (specified via the FORMAT option). If the format is not specified, **XML** is used by default.

6.18 EXPORT_DELETE

Description

The EXPORT_DELETE option specifies that the exported records from the UEC events database table are to be deleted upon **`-export EVENTS`** action (see Section 6.17 EXPORT).

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-export_delete				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

(There are no values for EXPORT_DELETE.)

6.19 FORMAT

Description

The FORMAT option specifies the format of the output from the **`-export` EVENTS** action.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-format *format*				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

format is the format of the output from **`-export` EVENTS**.

format can be either:

- **XML** Event data is exported as an XML (extensible markup language) document. XML is often used for exchanging data between two systems.
- **CSV** Event data is exported as a CSV (comma separated value) text file. The CSV file can be used by most spreadsheet software, such as Microsoft Excel.
- **ARC** Event data is exported in ARC (archival) format for long-term storage. The exported ARC format data (written in UTF-8) is portable between operating systems with differing code pages.

  The purpose of exporting data in the **ARC** format is to back up all UES data. The user must have permission to all Universal Brokers in order to export data for all UES records. This is best accomplished via the I-Management Console application by assigning the **All Agents** group to the user that is performing the UES export archive. (See Section 3.5.2 Assigning Agent Groups to a User in the Universal Enterprise Controller Client Applications 4.2.0 User Guide.)

[Default is XML.]

6.20 GROUPS

Description

The GROUPS option specifies a list of groups to which an ADD or DELETE option will be applied. Universal Brokers (supplied on the command line or in a definition file) are added or deleted from this list of groups.

If GROUPS is not specified on the command line, ADD or DELETE processing is performed for the Universal Broker definitions themselves.

Add Action

The Add action behaves as follows:

1. When a fully qualified broker definition is specified on the command line (that is, broker_name, broker_host, and broker_port):
   a. An attempt is made to add the broker definition to the UEC database.
   b. If the GROUPS option also is specified on the command line, an attempt is made to add the specified broker to each group in the groups list.
2. When a partial broker definition is specified on the command line along with the GROUPS option:
   a. A list of broker definitions from the UEC database that matches the command line broker values is returned from the UEC database.
   b. An attempt is made to add each broker in the returned broker list to each group in the specified groups list.
3. When a broker definition file is specified on the command line:
   a. An attempt is made to add each broker definition in the definition file to the UEC database.
   b. For each broker definition in the definition file that contains a GROUPS option, the following processing will be performed:

      If the broker definition was successfully added to the UEC database, an attempt will be made to add the specified broker to each group in the groups list.
   c. If the GROUPS option is specified on the command line, the command line groups value is applied to each broker definition in the definition file, overriding the groups option specified in any individual broker definition.

Also, using -deffile file and specifying the GROUPS option on the command line constrains the ADD action to only adding broker definitions to groups. New broker definitions are added to the UEC database. Therefore, only broker definitions in the definition file that already exist in the UEC database will be added to the specified groups list.

If a broker definition in the definition file does not exist in the database, UECLoad will print an error message to inform the user and continue processing the definition file.

If the broker definition already exists in the UEC database, an attempt will be made to add the specified broker to each group in the groups list. In this case the ADD action will be constrained.

Delete Action

The Delete action behaves as follows when the GROUPS option is specified on the command line:

1. When a broker definition (partial or complete) is specified on the command line along with the GROUPS option:
   a. A list of broker definitions from the UEC database that match the command line broker values is returned from the UEC database.
   b. An attempt will be made to delete each broker in the returned broker list from each group in the specified groups list.
2. When a broker definition file is specified on the command line along with the GROUPS option:
   a. An attempt will be made to delete each broker in the definition file from each group in the groups list specified on the command line.

      If a broker definition in the definition file contains a groups option, it will be ignored.

Export Action

The Export action includes the GROUPS option as part of the broker definition. For each broker definition that is exported, a GROUPS option will be included if the broker is associated with groups other than the default "All Brokers" group.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-groups *groupslist*				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

groupslist is a comma-separated list of groups either to which the Agent is added or from which the Agent is removed or exported. (The All Agents group is implied; it does not have to be included in the list.)

To specify a comma that is part of a group name, enter two consecutive commas. For example, to include **Atlanta, GA** in list of groups, specify:

-groups "GroupA,GroupB,Atlanta,, GA,GroupC"

If a single Agent definition is being added, deleted, or exported via the command line, an attempt will be made to add the Agent to, or delete / export the Agent from, each group in *groupslist*. If a group in the list does not exist, an error message is printed and processing continues with the next group in the list. (If -groups is not specified, the All Agents group is used.)

If a definition file is being processed, an attempt will be made to add all Agents in the definition file to, or delete / export all Agents in the definition file from, each group in *groupslist*. If a group in the list does not exist, a warning message will be printed and processing will continue with the next group in the list.

6.21 HELP

Description

The HELP option displays a description of the command options and their format.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-h				√	√
Command Line, Long Form	-help				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

(There are no values for the HELP option.)

6.22 LIST

Description

The LIST option specifies that the action being taken is to output current UEC Broker definitions in a user-friendly format.

Valid actions are ADD, DELETE, EXPORT, and LIST. Only one action can be specified at any one time.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	n/a					
Command Line, Long Form	-list				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

(There are no values associated with LIST.)

6.23 MESSAGE_LEVEL

Description

The MESSAGE_LEVEL option specifies the level of messages to write.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-l *level*				√	√
Command Line, Long Form	-level *level*				√	√
Environment Variable	UECLLEVEL=*level*				√	√
Definition File Keyword	n/a					

Values

level indicates either of the following level of messages:

- **trace**
  Writes trace messages used for diagnostic purposes (see Trace Files, below).
  Note: Use **trace** only as directed by Stonebranch, Inc. Customer Support.
- **audit**
  Writes audit, informational, warning, and error messages.
- **info**
  Writes informational, warning, and error messages.
- **warn**
  Writes warning and error messages.
- **error**
  Writes error messages only.

[Default is info.]

Trace Files

Windows

Trace file name is **`uecload.trc`**. It is created in the working directory of the user who executed **`uecload`**.

z/OS

Trace file is written to the data set referenced by the **UNVTRACE** ddname.

6.24 START_TIME

Description

The START_TIME option specifies the starting date and time selection criteria of the export of the UEC events database table.

Note: START_TIME is required when the –export EVENTS action is used (see Section 6.17 EXPORT).

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-s *startdate*[,*starttime*]				√	√
Command Line, Long Form	-stime *startdate*[,*starttime*]				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

startdate must be specified in the following format: YYYY/MM/DD

starttime must be specified in the following format: HH:MM:SS

Upon export, event records can be selected by using an asterisk (*****) for the *startdate*.

A rolling date can be specified with an asterisk (*****) followed by a negative value (for example, ***-2** selects records that were generated prior to two days before the current date). If *starttime* is not specified, a value of *00:00:00* is used.

6.25 UEC_PORT

Description

The UEC_PORT option specifies the TCP port on which to send the command.

UEC must be running and accepting connections on the specified port.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-p *port*				√	√
Command Line, Long Form	-port *port*				√	√
Environment Variable	UECLPORT=*port*				√	√
Definition File Keyword	n/a					

Values

port is the TCP/IP port on which to send the command.

port can be specified in either of the following formats:

- Number (for example, **8778**)
- Service name (for example, **uecload**)

[Default is *8778*.]

6.26 USER_ID

Description

The USER_ID option specifies the user identifier that is used to sign on to the UEC.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-u *user*				√	√
Command Line, Long Form	-userid *user*				√	√
Environment Variable	UECLUSERID=*user*				√	√
Definition File Keyword	n/a					

Values

user is the user identifier that is used to sign on to the remote computer.

Note: *user* must be a valid user identifier in the UEC database.

6.27 USER_PASSWORD

Description

The USER_PASSWORD option specifies the password for the user identifier that is specified in the USER_ID option.

The password always is encrypted.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-w *password*				√	√
Command Line, Long Form	-pwd *password*				√	√
Environment Variable	UECLPWD=*password*				√	
Definition File Keyword	n/a					

Values

password is the password for the user identifier.

password must be a valid password for the user identifier in the UEC database.

6.28 VERSION

Description

The VERSION option writes the program version information and copyright.

Usage

Method	Syntax	IBM i	NonStop	UNIX	Windows	z/OS
Command Line, Short Form	-v				√	√
Command Line, Long Form	-version				√	√
Environment Variable	n/a					
Definition File Keyword	n/a					

Values

(There are no values to be specified for this option.)

CHAPTER 7

Additional Information

7.1 Overview

This chapter provides additional information related to Universal Enterprise Controller.

Table 7.1, below, identifies this information and provides a link to its location in this document.

Information	Description	Page
Character Code Pages	Character Code pages for use with Universal Enterprise Controller.	144
UTT Files	Universal Translate Table (UTT) files are used to translate between Unicode and the local single-byte code page.	146

Table 7.1 Universal Enterprise Controller - Additional Information

7.2 Character Code Pages

Table 7.2 identifies the character code pages provided by Stonebranch Inc. for use with Stonebranch Solutions on each supported operating system.

Code Page	CCSID	z/OS	UNIX	Windows	IBM i		HP NonStop
					HFS	LIB	
IBM037	037	√			√	√	
IBM273	273	√			√	√	
IBM277	277	√			√	√	
IBM278	278	√			√	√	
IBM280	280	√			√	√	
IBM284	284	√			√	√	
IBM500	500	√			√	√	
IBM875	875	√					
IBM1047							
IBM1140	1140	√			√	√	
IBM1141	1141	√			√	√	
IBM1142	1142	√			√	√	
IBM1143	1143	√			√	√	
IBM1144	1144	√			√	√	
IBM1145	1145	√			√	√	
IBM1146	1146	√			√	√	
IBM1147	1147	√			√	√	
IBM1148	1148	√			√	√	
IBM4971	4971	√					
ISO8859-1	819		√	√	√		√
ISO8859-2	912		√	√	√		√
ISO8859-3	913		√	√	√		√
ISO8859-4	914		√	√	√		√
ISO8859-5	915		√	√	√		√
ISO8859-6	1089		√	√	√		√
ISO8859-7	813		√	√	√		√
ISO8859-8	916		√	√	√		√
ISO8859-9	920		√	√	√		√
ISO8859-10			√	√	√		√
ISO8859-13	921		√	√	√		√
ISO8859-14			√	√	√		√
ISO8859-15	923		√	√	√		√
PC437	437			√	√		

Code Page	CCSID	z/OS	UNIX	Windows	IBM i		HP NonStop
					HFS	LIB	
PC737	737			√	√		
PC775	775			√	√		
PC850	850			√	√		
PC852	852			√	√		
PC855	855			√	√		
PC857	857			√	√		
PC860	860			√	√		
PC861	861			√	√		
PC862	862			√	√		
PC863	863			√	√		
PC864	864			√	√		
PC865	865			√	√		
PC866	866			√	√		
PC869	869			√	√		
PC874	874			√	√		
WIN1250	1250			√	√		
WIN1251	1251			√	√		
WIN1252	1252			√	√		
WIN1253	1253			√	√		
WIN1254	1254			√	√		
WIN1255	1255			√	√		
WIN1256	1256			√	√		
WIN1257	1257			√	√		
WIN1258	1258			√	√		

Table 7.2 Character Code Pages

7.3 UTT Files

Universal Translate Table (UTT) files are used to translate between Unicode and the local single-byte code page.

Operating System	UTT File Location
z/OS	UTT files are members of the PDS allocated to the Broker ddname **UNVNLS**. *codepage* specifies the member name.
Windows	UTT files are located in the **NLS** subdirectory of the installation directory. *codepage* is the base file name of the UTT file.

Table 7.3 UTT File Locations

CHAPTER 8

Troubleshooting

8.1 Overview

This chapter provides information on troubleshooting Universal Enterprises Controller (UEC).

8.2 Java Under Windows

8.2.1 Java Compatibility

The Universal Enterprise Controller Client Applications have been tested and verified with Sun Java Runtime versions 1.5.

8.2.2 Known Problems

Java Upgrade Problems

There have been various problems reported, when installing one version of Sun's Java over another, that will cause some Java applications to work incorrectly. Un-install the original version of the JVM and install the new version. A fresh install will usually resolve these issues.

8.3 Java Under Linux

8.3.1 Java Compatibility

The Universal Enterprise Controller Client Applications have been tested and verified with Sun Java Runtime versions 1.5.

8.3.2 Known Problems

Wrong Window/Dialog Sizes Under KDE

The main window and dialogs may display at the incorrect sizes when using Java version 1.3.1 from Sun and the KDE window manager. Upgrading to Java version 1.4.1 or using another window manager (such as Gnome) will solve this problem.

8.4 Java Under Mac OS X

8.4.1 Java Compatibility

UEC has been tested and verified with the release 1.5 versions of Apple's JVM.

8.5 UEC Problems

8.5.1 UEC Incorrectly Reports a Universal Broker as Unreachable

UEC uses the Universal Query protocol to poll the Universal Brokers in its list.

Universal Broker versions earlier than 2.1 (or 1.2 with PTF 5 on the AS/400) do not support this protocol; they will appear to be unreachable by UEC.

If a Universal Broker being reported – incorrectly – as unreachable is of the proper version, ensure that:

- Address and port have been entered correctly
- TCP connection can be made from the machine running UEC to the machine with the incorrectly reported Broker.

Universal Query can be used to verify the connection. If you can query the Broker using Universal Query from the machine on which UEC is running, UEC should be able to poll the Broker.

APPENDIX A

Customer Support

Stonebranch, Inc. provides customer support, via telephone and e-mail, for Universal Enterprise Controller and all Stonebranch Solutions components.

E-MAIL

All Locations

support@stonebranch.com

Customer support contact via e-mail also can be made via the Stonebranch website:

www.stonebranch.com

TELEPHONE

Customer support via telephone is available 24 hours per day, 7 days per week.

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