

The logo for Common Netherlands, featuring the word "common" in a stylized, blue, outlined font with rounded, bubbly letters.

NETHERLANDS

Administration Runtime Expert (ARE)

Een eerste kennismaking

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Agenda

- Wat is Administration Runtime Expert (ARE)?
- Hoe installeer ik ARE?
- Hoe gebruik ik ARE?
- Wat kan ik ARE?

Praktijkvoorbeelden:

- PTF's
- System values
- Temporary License keys

Wat is Administration Runtime Expert?

- Introductie naam: Application Runtime Expert – 5733ARE
- Beschikbaar sinds 18 juni 2010
- Home page: <http://www-03.ibm.com/systems/power/software/i/are>

IBM Administration Runtime Expert for i (ARE) is a new product that has the potential to revolutionize how you do application service and support. ARE can help you ensure consistent performance and deployment for any workload running on your system.



The product ships with an intuitive, easy to use GUI interface, that allows you to collect and verify a customized set of information about an application, its runtime environment, and the IBM i system that it runs on. You have the ability to collect a wide array of information, system settings, and attributes. This collected information is built into what we call a 'template'. Once you have built a template, you can use it to verify the application, and its environment, on the same system where the template was built, or any other IBM i system. A system is verified against the information stored in the template, and the results are documented in a set of reports. These reports give a clear and concise view of what has changed, or what is different. The beauty of this interface and methodology is that it allows you build and maintain an application knowledge base; one that can be used to automatically apply its knowledge to verify a system. You can easily update your template to include new information and settings as you learn more about things that cause your application or system run incorrectly.

Wat is Administration Runtime Expert?

What can be collected

The IBM Administration Runtime Expert for i has a wide array of application attributes and settings it can collect, along with many of the system settings and values most critical to your applications. Here are some of the possible attributes and values that can be collected:

- File/directory/library authorities
 - Owner
 - Authorization list
 - Primary group
 - Object authorities
 - Data authorities
- File/directory/library attributes
 - Creation date
 - Last modified date
 - File size
 - File type
 - CCSID
 - IBM i object native attributes
- Attributes within property/http/XML configuration files
- User IDs
- Product PTFs & PTF Groups
- System Values & Network Attributes
- Product install status
- TCP/IP Network verification and configuration
- Environment variables
- Ports in use
- CL and QSHELL command output
- SQL statement output
- Log files

Wat is Administration Runtime Expert?

IBM Administration Runtime Expert for i (ARE) is a new product that has the potential to revolutionize how you do application service and support. ARE can help you ensure consistent performance and deployment for any workload running on your system.

The product ships with an intuitive, easy to use GUI interface, that allows you to collect and verify a customized set of information about an application, it's runtime environment, and the IBM i system that it runs on.

Dit verklaart de oorspronkelijke naam: Application Runtime Environment
Waarom dan de naamswijziging van Application => Administration

Wat is Administration Runtime Expert?

Het is een beheer tool, waarmee informatie verzameld kan worden.

Hoe installeer ik ARE?

Check vooraf de requirements:

<https://www-03.ibm.com/systems/power/software/i/are/gettingstarted.html>

Requirements

Installation

Usage

Before installing the IBM Administration Runtime Expert for i product, it is important to ensure all required software products are installed on your system, and that the products are updated to the correct PTF levels. The required software products, and the PTF levels for them, are listed below.

IBM i 7.3

Products

- 5770SS1 option 3 – Extended Base Directory Support
- 5770SS1 option 12 – Host Servers
- 5770SS1 option 30 – QShell
- 5770SS1 option 33 – PASE
- 5770JV1 option 14 – J2SE 7 32 bit
- 5770DG1 – IBM HTTP Server for i

PTF requirements

- Java Group PTF SF99725 level 1 or later

Hoe installeer ik ARE?

Waar vind ik de installatie software?

IBM's My Entitled Systems Support:

<https://www-304.ibm.com/servers/eserver/ess/ProtectedServlet.wss>

Servers > My entitled software > Software downloads >

Software downloads

The software available for download is based on all active entitlements associated with all customer numbers registered under your profile. Check [Help](#) for a list of supported products.

Step 1: Select your operating system type and version

Operating System:

Version:

Hoe installeer ik ARE?

RSTLICPGM LICPGM(5733ARE) DEV(OPTVRT01) OPTION(*BASE) RSTOBJ(*ALL)

The latest IBM Administration Runtime Expert for i GUI interface (5733ARE) enhancements are available with following PTFs:

- IBM i V7.3: SI64450, SI63564
- IBM i V7.2: SI64450, SI63563
- IBM i V7.1: SI64450, SI63562

This PTF upgrades the Web user interface to version 3.2.6. The upgraded Web user interface contains several new enhancements and fixes:

- Update the formal name of ARE from Application Runtime Expert for i to Administration Runtime Expert for i.

Hoe gebruik ik ARE?

STRTCPSVR SERVER(*HTTP) HTTPSVR(IBMARE)

Type options, press Enter.

2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message
8=Work with spooled files 13=Disconnect ...

Opt	Subsystem/Job	User	Type	CPU %	Function	Status
—	IBMARE	QTMHHTTP	BCH	0,0	PGM-QZHBMAIN	SIGW
—	IBMARE	QTMHHTTP	BCI	0,0	PGM-QZSRLOG	SIGW
—	IBMARE	QTMHHTTP	BCI	0,0	PGM-QZSRHTTP	SIGW
—	IBMARE	QWEBADMIN	BCI	0,0	JVM-/qibm/prod	THDW

Hoe gebruik ik ARE?

http://system_name:12401/are

IBM Administration Runtime Expert for i IBM


Deployment Template Editor

The Deployment Template Editor allows users to create, edit, import and export deployment templates. The editor enables users to customize their templates. Templates created, imported, or edited using this editor can be used to verify systems using the 'Launch console' button below. [? Learn more...](#)

Manage templates:

Name	Last built by
<input type="radio"/> Are_demo_License_Check	RUDI
<input checked="" type="radio"/> Are_demo_System_Values	RUDI
<input type="radio"/> Are_demo_User_Usage	RUDI
<input type="radio"/> PTF_Checker_CS	RUDI
<input type="radio"/> PTF_Checker_PSP	RUDI
<input type="radio"/> PTF_Checker_PSP_new	RUDI

Create ▾ Import ▾ Actions ▾



V 3.2.6

Wat kan ik met ARE?

Praktijkvoorbeeld: PTF's

Uitgangspunt is: [Blog: I can - Dawn May](#)

IBM i Internet toegang:

[IBM i - ESA and ECS VPN and HTTP Firewall Settings](#)

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

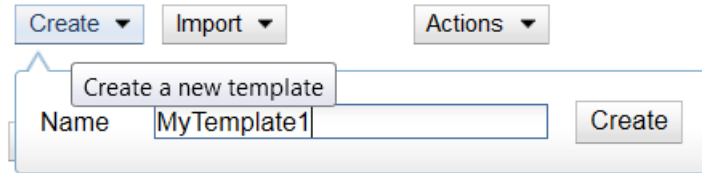
Doel:

- System values van systemen met elkaar vergelijken:
Bron systeem met een doel systeem
- Rapportage van verschillen

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

Kies de optie “Create”:



The screenshot shows a software interface with three dropdown menus: 'Create', 'Import', and 'Actions'. The 'Create' dropdown is open, showing a sub-menu with the option 'Create a new template'. Below this option is a text input field containing 'MyTemplate1' and a 'Create' button.

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

IBM Administration Runtime Expert for i

Home > Plugin Selection and Customization > System Values and Network Attributes

System Values and Network Attributes

Select System Values or Network Attributes to Verify

System values and network attributes [? Learn more...](#)

ALRBCKFP	
ALRCTL	
ALRDFTFP	
ALRFTR	
ALRHLCNT	
ALRLOGSTS	
ALRPRIFP	
ALRRQSFP	
ALRSTS	
ALWADDCLU	
ALWANYNET	
ALWHPRTWR	
ALWVRTAPPN	
DDMACC	
DFTCNLST	

Previous Next 1/3

Position to:

Collection name:

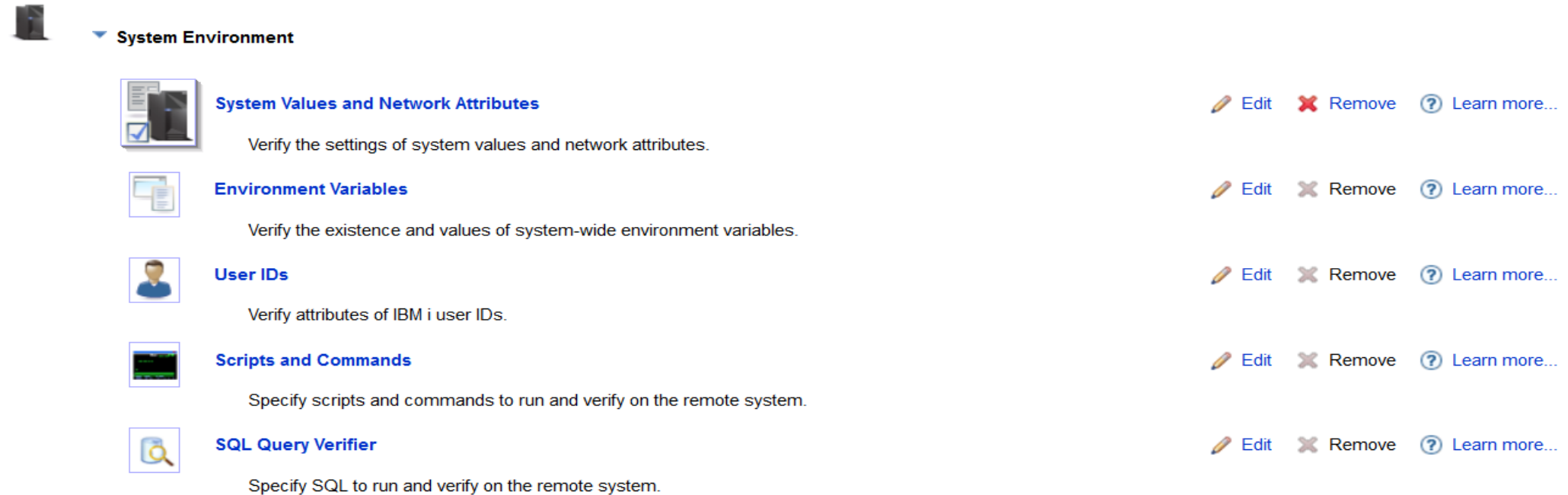
Values to verify [? Learn more...](#)

QABNORMSW	Edit
QACGLVL	Edit
QACTJOB	Edit
QADLACTJ	Edit
QADLSPLA	Edit
QADLTOTJ	Edit
QALWJOBITP	Edit
QALWOBJRST	Edit
QALWUSRDMN	Edit
QASTLVL	Edit
QATNPGM	Edit
QAUDCTL	Edit
QAUDENDACN	Edit
QAUDFRCLVL	Edit
QAUDLVL	Edit

OK Cancel

Wat kan ik met ARE?

Praktijkvoorbeeld: System values



The screenshot shows a configuration window for 'System Environment'. It contains a list of five items, each with an icon, a title, a description, and three action buttons: 'Edit', 'Remove', and 'Learn more...'. The items are:

- System Values and Network Attributes**: Verify the settings of system values and network attributes.
- Environment Variables**: Verify the existence and values of system-wide environment variables.
- User IDs**: Verify attributes of IBM i user IDs.
- Scripts and Commands**: Specify scripts and commands to run and verify on the remote system.
- SQL Query Verifier**: Specify SQL to run and verify on the remote system.

Advanced

Build template Cancel Template build options

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

IBM Administration Runtime Expert for i

Start building template: Are_demo_System_Values

- Saving plugin configuration: System Values and Network Attributes
- Skipping collection (not modified or already saved): System_Values

Formalizing template...
Creating template...

Total time: 00:00:03
Finish building template. The build was successful.

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

De rapportage via e-mail instellen:

Console

The IBM Administration Runtime Expert for i is capable of verifying multiple IBM i systems using a deployment template created or imported using the deployment template editor.

Groups:

Default Systems to verify:

	System name	User ID	Password	Template
<input type="checkbox"/>	192.168.69.11	Rudi	●●●●●●	Are_demo_License_Check
<input checked="" type="checkbox"/>	192.168.69.12	Rudi	●●●●●●	Are_demo_System_Values

Add Remove Select all Deselect all **Runtime properties**

Note: Only selected systems are verified. Schedule runs only if IBMARE is running.

Verify systems View previous results

Schedule
Every month, 01, 10:00
Passwords not set

Launch deployment template editor

Import and view report

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

Console Runtime Properties

Default user ID

Specify individual user ID and passwords [? Learn more...](#)

Use default user ID and password for all systems

Number of systems to verify at the same time:

Logging level:

Input properties for the Administration Runtime Expert:

Properties specified here are provided as input to the Administration Runtime Expert when it is run to verify each system using the specified de
Example: *my.property.key=myValue*

Enable email notifications

*SMTP server name:

Port:

*From:

*To: (use comma to separate addresses)

Send on:

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

De uitvoering:

Console

The IBM Administration Runtime Expert for i is capable of verifying multiple IBM i systems using a deployment template created or imported using the deployment template editor.

Groups:

Default Systems to verify:

	System name	User ID	Password	Template
<input type="checkbox"/>	192.168.69.11	Rudi	●●●●●●	Are_demo_License_Check ▾
<input checked="" type="checkbox"/>	192.168.69.12	Rudi	●●●●●●	Are_demo_System_Values ▾

Add Remove Select all Deselect all Runtime properties

Note: Only selected systems are verified. Schedule runs only if IBMARE is running.

Verify systems View previous results

[Schedule](#)
Every month, 01, 10:00
Passwords not set

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

Het resultaat:



[Console](#) > Result

Console

System verification status:

1/1 complete

 Refresh

System name	Template	Status	Result
192.168.69.12	Are_demo_System_Values	 Complete	 32 error(s), 0 warning(s), 0 info(s)

Back

Stop all

Wat kan ik met ARE?



Praktijkvoorbeeld: System values

Het resultaat:

[Console](#) > Result

Console

System verification status: 1/1 complete [Refresh](#)

System name	Template	Status	Result
192.168.69.12	Are_demo_System_Values	 Complete	 32 error(s), 0 warning(s), 0 info(s)

[Summary Report](#)

[Detailed Report](#)

[View summary report](#)

[Download Archive](#)

[Runtime Log](#)

[Remote runtime log](#)

[Remote stdout](#)

[Remote stderr](#)

[Back](#)

[Stop all](#)

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

Het resultaat:

[Console](#) > [Result](#) > Summary Report

Summary Report


System name: 192.168.69.12

Remote core version: 1.6.20

Template: Are_demo_System_Values

User ID: RUDI

Summary details [? Learn more...](#)

Plugin name	Attributes verified	Error	Warning	Info	Fix actions
▶  System Value Verifier	154	32	0	0	None

[Back](#)

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

Het resultaat:

Summary details [? Learn more...](#)

Plugin name	Attributes verified	Error
System Value Verifier	154	32
Description		
System value "QACTJOB" does not match its expected value		
Expected QACTJOB to equal 300 Actual value for QACTJOB is 200		
System value "QADLACTJ" does not match its expected value		
Expected QADLACTJ to equal 25 Actual value for QADLACTJ is 30		
System value "QADLTOTJ" does not match its expected value		
Expected QADLTOTJ to equal 25 Actual value for QADLTOTJ is 30		
System value "QASTLVL" does not match its expected value		
Expected QASTLVL to equal *INTERMED Actual value for QASTLVL is *BASIC		
System value "QAUDCTL" does not match its expected value		
Expected QAUDCTL to equal *NONE Actual value for QAUDCTL is *AUDLVL		
System value "QAUDLVL" does not match its expected value		
Expected QAUDLVL to equal [*CREATE' *DELETE' *SECURITY' *SAVRST' *OBJMGT'] Actual value for QAUDLVL is [*JOBDDTA' *CREATE' *DELETE' *OBJMGT' *SAVRST' *SECURITY' *SPLFDTA' *AUDLVL2']		
System value "QAUDLVL2" does not match its expected value		

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

Het resultaat (fragment van e-mail):

```
~~~~~  
ERROR! System value 'QACTJOB' does not match its expected value  
ERROR! System value 'QADLACTJ' does not match its expected value  
ERROR! System value 'QADLTOTJ' does not match its expected value  
ERROR! System value 'QASTLVL' does not match its expected value  
ERROR! System value 'QAUDCTL' does not match its expected value  
ERROR! System value 'QAUDLVL' does not match its expected value  
ERROR! System value 'QAUDLVL2' does not match its expected value  
ERROR! System value 'QBASACTLVL' does not match its expected value  
ERROR! System value 'QBASPOOL' does not match its expected value  
ERROR! System value 'QCHRID' does not match its expected value  
ERROR! System value 'QCNTYID' does not match its expected value  
ERROR! System value 'QCONSOLE' does not match its expected value  
ERROR! System value 'QDATE' does not match its expected value  
ERROR! System value 'QDATSEP' does not match its expected value  
ERROR! System value 'QDAY' does not match its expected value  
ERROR! System value 'QDAYOFWEEK' does not match its expected value  
ERROR! System value 'QDECfmt' does not match its expected value  
ERROR! System value 'QHOURL' does not match its expected value  
ERROR! System value 'QHSTLOGSIZ' does not match its expected value  
ERROR! System value 'QIPLSTS' does not match its expected value  
ERROR! System value 'QJOBMSGQFL' does not match its expected value  
ERROR! System value 'QJOBMSGQMX' does not match its expected value  
ERROR! System value 'QLIBLCKLVL' does not match its expected value  
ERROR! System value 'QLOGOUTPUT' does not match its expected value  
ERROR! System value 'QMCHPOOL' does not match its expected value  
ERROR! System value 'QQRDEGREE' does not match its expected value  
ERROR! System value 'QSCANFSCTL' does not match its expected value  
ERROR! System value 'QSSLCSL' does not match its expected value  
ERROR! System value 'QSTRUPPGM' does not match its expected value  
ERROR! System value 'QTOTJOB' does not match its expected value  
ERROR! System value 'QUPSDLYTIM' does not match its expected value  
ERROR! System value 'QUPSMGQ' does not match its expected value
```

Wat kan ik met ARE?

Praktijkvoorbeeld: System values

Het resultaat (fragment van e-mail):

Regards,
ARE tool

Notes and Tips -

- For more detailed information included in this email, go to [http://\[redacted\]:12401/are/](http://[redacted]:12401/are/) -> Launch Console -> ViewPreviousResults
- To disable or update these email notifications, go to [http://\[redacted\]-12401/are/](http://[redacted]-12401/are/) -> Launch Console -> Runtime properties
- For more information about ARE tool in general, go to <http://www-03.ibm.com/systems/power/software/i/are/index.html>

Wat kan ik met ARE?

Praktijkvoorbeeld: Temporary License keys

Doel:

- Check Temporary License keys
- Rapportage termijn vervaldatum Temporary License keys

Wat kan ik met ARE?

Praktijkvoorbeeld: Temporary License keys

[Home](#) > [Plugin Selection and Customization](#) > [SQL Query Verifier](#) > [Customize SQL Query Verifier](#)

Customize SQL Query Verifier

Specify the SQL Query and Verifications Details

Collection name:

Select statement [? Learn more...](#)

```
SELECT * FROM QSYS2.LICENSE_INFO WHERE INSTALLED = 'YES' AND LICENSE_EXPIRATION <= CURRENT DATE + 30 DAYS;
```

Example: `SELECT * FROM myDB.myTable`

Print the result set of SQL query to the verification report:

Check the number of records returned for the SQL query [? Learn more...](#)

Expect value:

Comparison:

Severity:

Column value verification conditions [? Learn more...](#)

	Column name	Check class	Expected value	Comparison	Result type	Match case	Severity	Description
Example id		Numeric	6	Equals	All	False	Error	All ids should equal to 6
Example name		String	John	Contains substring	Any	True	Error	Names returned should contain 'John'

This table is empty.

Wat kan ik met ARE?

Praktijkvoorbeeld: Temporary License keys

Periodiek uitvoeren:

Console

The IBM Administration Runtime Expert for i is capable of verifying multiple IBM i systems using a deployment template created or imported using the deployment template

Groups: Default

Systems to verify:

	System name	User ID	Password	Template
<input checked="" type="checkbox"/>	192.168.69.11	Rudi	••••••	Are_demo_License_Check
<input type="checkbox"/>	192.168.69.12	Rudi	••••••	Are_demo_System_Values

Buttons: Add, Remove, Select all, Deselect all, Runtime properties

Note: Only selected systems are v

Buttons: Verify systems, View prev

Buttons: Launch deployment template editor, Import and

Schedule Setting

No schedule
 Daily
 Weekly
 Monthly

Every 1 At 10 : 0

Note: Only selected systems are verified. Schedule runs only if IBMARE is running. [Learn more...](#)

Buttons: OK, Cancel

Buttons: Schedule (Every month, 01, 10:00)

Wat kan ik met ARE?

Praktijkvoorbeeld: Temporary License keys

Het resultaat:

Console > Result

Console

System verification status: 1/1 complete [Refresh](#)

System name	Template	Status	Result
192.168.69.11	Are_demo_License_Check	Complete	✓ No problem found

[Back](#) [Stop all](#)

Wat kan ik met ARE?

Praktijkvoorbeeld: Temporary License keys

Het resultaat:



[Console](#) > Result

Console

System verification status:

1/1 complete

 Refresh

System name	Template	Status	Result
192.168.69.11	Are_demo_License_Check	 Complete	 1 error(s), 0 warning(s), 0 info(s)

[Back](#)

[Stop all](#)

Wat kan ik met ARE?

Praktijkvoorbeeld: Temporary License keys

Het resultaat (fragment van e-mail):

```
From file:  
/QIBM/UserData/ARE/workspace/console/temp/Default/20170423185956_M/192.168.69.11_Are_demo_license_Check_Rudi_15/arercReport.zip:reports/summaryReport.txt  
~~~~~  
ERROR! Fail: the result count is not expected. 18 equals 0 is false!
```


Vragen?

Dank voor uw aandacht!