



MultiValue Performance Experience Reference Guide FAQ V1.10.0

Notices

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Rocket Software, Inc. develops enterprise infrastructure products in four key areas: storage, networks, and compliance; database servers and tools; business information and analytics; and application development, integration, and modernization.

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- China: 400-120-9242
- France: 08-05-08-05-62
- Germany: 0800-180-0882
- Italy: 800-878-295
- Japan: 0800-170-5464
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Review MultiValue Performance Experience FAQs

Review and assess information to assist in your answering common questions that empower you to use Rocket MultiValue Performance Experience in the most optimal way.

To review information to answer questions you may have about using Rocket MultiValue Performance Experience, access the topic that is specific to a specific aspect of any MultiValue Performance Experience feature.

- [MultiValue Performance Experience and UniVerse / UniData database licensing](#)
- [MultiValue Performance Experience logging](#)
- [MultiValue Performance Experience ordering, installation, and management](#)
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MultiValue Performance Experience and UniVerse / UniData database licensing

Review and assess information to assist you to answer common questions surrounding MultiValue Performance Experience licensing.

Question:

Do I need to purchase anything from Rocket Software?

Answer:

MultiValue Performance Experience is offered at no charge to our UniVerse / UniData customers on Active Maintenance.

Question:

Where is the MultiValue Performance Experience license agreement located and stored?

Answer:

The MultiValue Performance Experience license is installed to the root of your MVX installation directory.

Question:

As a Partner, can I obtain RBC login credentials for my end users who intend to use MultiValue Performance Experience?

Answer:

Yes. Your end users can obtain logins, but as their partner you must make the request.



Note: Anything your end user does, such as ordering something that carries a charge in later features, is your responsibility as a partner.

To enable MultiValue Performance Experience to monitor a server's performance, MultiValue Performance Experience must communicate with RBC. Therefore, MultiValue Performance Experience requires users to provide RBC login credentials (username / password). In addition, users must have the authority to conduct transactions in RBC (such as making purchases) for the MultiValue Performance Experience and UniVerse / UniData license. To

clarify: RBC credentials which users enter into MultiValue Performance Experience must include an RBC login, with ordering privileges associated with a Partner's account.

Contact rbc@rocketsoftware.com if you require new unique login credentials.

Question:

Do I need to purchase a new UniVerse or UniData server license to use MultiValue Performance Experience?

Answer:

No. Your existing UniVerse or UniData server license will work with MultiValue Performance Experience as long as you are on supported versions.

Question:

Does MultiValue Performance Experience consume any other UniVerse or UniData licenses?

Answer:

UniVerse and UniData servers that are registered with MultiValue Performance Experience for performance monitoring do *not* require you to purchase any additional licenses. The only requirement for monitoring registered servers is that those servers must be on active maintenance.

MultiValue Performance Experience logging

Review and assess information to assist you to answer common questions surrounding MultiValue Performance Experience logging operations.

Question:

What can I do if the MultiValue Performance Experience application is generating too many repetitive logging messages?

Answer:

The MultiValue Performance Experience application, when running, can under certain situations generate a large amount of repetitive logging messages. If left unattended, such messages can rapidly fill your system disk space. This may result in your system becoming unstable.

Numerous repetitive log messages exist in both the `mvx.log` and `mvadmin.log` files. This is by design: do not regard it as an issue.

However, for unexpected error scenarios such as inadequate setup of external Kafka or Keycloak components or back-end MV servers not responding to requests, the system may log a large amount of repetitive error messages. Here it is best to judiciously log a few messages, then stop logging yet retain the causes of errors to help you troubleshoot.

Repetitive log message suppression is implemented as of MultiValue Performance Experience V1.5.0 and higher to address these scenarios:

- Kafka repetitive log messages
- MultiValue Performance Experience Core and MVAdmin repetitive log messages

Kafka log policies are defined in the `log4j.properties` file. This file is located the `./kafka_2.13-3.1.1/config` directory. The logging level is set, by default, to INFO. The INFO setting logs a large amount of INFO, WARN and ERROR level messages. If your Kafka TLS properties are not optimally configured, a large number of TLS authentication error messages can result.

To prevent this outcome, the default `log4j.properties` file log level settings are now set to ERROR for the relevant instances where this setting exists. This results in only the logging of ERROR level messages and reduces the total log volume.

Should you need to diagnose Kafka issues, change the log level setting to INFO: this instructs Kafka to produce more messages. You can also try the DEBUG and TRACE settings for further diagnostics. Restart the MultiValue Performance Experience application to activate any changes you make to logging levels.

For MultiValue Performance Experience Core and MVAdmin repetitive log messages, a `logmsg-skip-config.yaml` message suppression configuration file is available.

You can change the log suppression configuration at any time, even while the MultiValue Performance Experience or MVAdmin application is running. Your change will take effect shortly after you save it to disk.

For MultiValue Performance Experience, the file is located in the `./mvx/config` directory. For MVAdmin, you can find the file in the `./MVAdmin` directory. This is a `.yaml` format file containing "blocks" of properties: each block suppresses a single message. You can repeat the block as many times as you want in order to suppress different messages.

For more information, see the "Configuring MVX log files" topic in the most current "MultiValue Performance Experience Installation and User Guide".

MultiValue Performance Experience ordering, installation, and management

Review and assess information to assist you to answer common questions surrounding MultiValue Performance Experience installations, upgrades, and general management.

Question:

Does MultiValue Performance Experience require an active internet connection in order to function?

Answer:

Yes. MultiValue Performance Experience requires an active internet connection in order to access RBC. MultiValue Performance Experience calls RBC to:

- Register the MultiValue Performance Experience serial number.
- Ensure that the UniVerse / UniData server to be monitored is on active maintenance.



Note: MultiValue Performance Experience stops functioning, after several warnings, if it fails to establish and maintain an active internet connection with RBC over the Internet.

Question:

What version of MultiValue Performance Experience should I download?

Answer:

MultiValue Performance Experience provides the functionality that is supported by the server version in use. Therefore the best option is to download the latest version of MultiValue Performance Experience.

Question:

How do I place an order for MultiValue Performance Experience using RBC?

Answer:

Navigate to and follow the instructions in this "Order MVX Performance" document located in **RBC > Resources:** https://rbc.rocketsoftware.com/downloads/userdocumentation/order_mvx_performance.pdf?18:43.

Question:

If running an older version of UniVerse (such as V11.3.3 or V11.3.2), do I need to upgrade?

Answer:

Yes. You need to upgrade because the MultiValue Performance Experience GA release works only with UniVerse V11.3.4 (AIX; Linux; Windows).

Question:

Can I get help if upgrading a database to UniVerse V11.3.4+ or UniData V8.3.2?

Answer:

The Rocket Customer Solutions Engineering (CSE) Team offers an upgrade package, together with a MultiValue Performance Experience training and setup package to assist customers who move from older versions of UniVerse to V11.3.4+ or to UniData V8.3.2. Contact your Rocket sales representative for more details.

Question:

What are the MultiValue Performance Experience hardware requirements?

Answer:

MultiValue Performance Experience requires hardware with a minimum of:

- 5 GB of available hard disk space.
- 8 GB of RAM memory.

Question:

What are the MultiValue Performance Experience software requirements?

Answer:

MultiValue Performance Experience has several software requirements:

- MultiValue Performance Experience V1.10.0 is delivered as a Docker image built on a Rocky Linux 9.3 base image. Both the Docker Community edition and the Docker Enterprise edition are supported.
- MultiValue Performance Experience is supported on these platforms: Windows 10 and 11 (using Docker Desktop for Windows), Red Hat Linux 7.x, Red Hat Linux 8.x, Alma Linux 8.x (using Docker V20.10.22 or higher, and Rocky Linux 8.x or higher (using Docker V20.10.22 or higher, CentOS 7.x (using Docker V1.13.1-161 or higher), and CentOS 8.x (using Podman V1.6.4 and higher).
- Use of the 1.10.0 automated Linux installation script requires that you are running Red Hat at RH 8.x or higher, CentOS at 8.2 or higher, Alma Linux 8.x or higher, or Rocky Linux 8.x or higher.
- Use of Red Hat 7.x, CentOS 7.x, Alma Linux 8.x, or Rocky Linux 8.x or higher requires that your Linux `libseccomp` package is up to date.
- **Important!** At the V1.10.0 release level, MVX Server is not supported for Windows 2019 unless there is a Docker Desktop on the 2019 Server. MVAdmin supports only Windows 2019 and Windows 2022 Server editions (depending on what the database supports).

Question:

What are the MultiValue Performance Experience database components requirements?

Answer:

A database must be installed and licensed. Be aware that evaluation versions of your database must also be licensed. You must switch on components on the database side to be able to pull diagnostics into the MVX Server.

For UniData:

Use the following commands on both Windows and Linux to verify status information about the UniData database:

1. To identify the UniData version and other license information, type:

```
cd $UDTBIN (for Linux)
[or]
cd %UDTBIN% (for Windows)
```

2. To identify the UniData product version, type:

```
confcmd -z
```

3. To identify the UniData build number, type:

```
confcmd -b
```

4. To identify the UniData license information, type:

```
confcmd -z
```

In order for UniData to work with MultiValue Performance Experience, you must adjust the parameters in the existing `udtconfig` file. To do this:

1. Open the `udtconfig` file in your preferred text editor.
2. Find the **PERF_MON_MODE** parameter.
3. By default, **PERF_MON_MODE** is switched off. Ensure that this mode is set to on to enable performance monitoring:

```
PERF_MON_MODE 1
```

4. Save the file, then bring the UniData database down. To do this, type:

```
stopud -f
```

5. Restart the UniData database. To do this, type:

```
startud
```

For UniVerse:

To verify your database licensing status in Windows:

1. Open the **User Account Control** pop-up (for example: for your U2 database). Select **Yes** to launch the **UniVerse Control Panel**.

2. Select the **UniVerse Control Panel > About** tab to verify the **Product Version** of UniVerse currently in use. It must be a version that meets the minimum requirements.
3. Select the **UniVerse Control Panel > Services** tab to verify that the database services are currently running.

To verify your database licensing status in Linux:

1. Open a root level command prompt session.
2. To verify the **Product Version** of UniVerse currently in use, from the root prompt, type:

```
uv -version
```

3. To verify the **Build Number** of UniVerse currently in use, from the root prompt, type:

```
uv -buildno
```

4. To verify that the database product has been licensed, from the root prompt type these two commands:

```
cd $UVHOME  
uvregen -z
```

5. Look to see that the license is enabled (Device Licn.: Enabled) and that the product is authorized (Authorized...: Yes).

In order for UniVerse to work with MultiValue Performance Experience, you must switch on the performance shared memory and also make a change to the parameters in the existing `uvconfig` file. To do this in Windows:

1. Open the `uvconfig` file in Windows Notepad.
2. Use the Windows **Find** feature to scroll to the **PERF_MON_MODE** parameter switch.
3. By default, **PERF_MON_MODE** is switched off. Ensure that this mode is set to on to enable performance monitoring:

```
PERF_MON_MODE 1
```

4. Save the file, then bring the UniVerse database down.
5. To ensure that the database is now actually running with the required component mode, run this command against the database prior to restarting the database:

```
uvregen -z
```

6. If you use the UniVerse control panel, you are not able to see the change. However, a comment will appear in the UniVerse startup log that confirms the mode change. To access the log, from the root command prompt type:

```
cat $UVHOME/startuv.log
```

7. Verify that this entry appears in the startup log: Performance shared memory is created.

MultiValue Performance Experience and Keycloak

Review and assess information to assist you to answer common questions surrounding MultiValue Performance Experience and its use with Keycloak.

Question:

What do I do if at MVAdmin V1.4.0, V1.5.0, or V1.6.0 I attempt to change the Admin application client secret and I receive an error response reading: `Invalid client or secret`?

Answer:

This issue is corrected in the MultiValue Performance Experience / MVAdmin v1.7.0 release.

For MVAdmin V1.4.0, V1.5.0, or V1.6.0 users, an issue exists with the format of the client secret- this leads to the system misinterpreting the string and causing the `Invalid client or secret` error.

When the secret is generated, two different formats can be randomly generated:

1. xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx (36-characters), OR:
2. A format such as: W4t3iQHZNKfSj2xlZenbmrU7zLgf0G (32 characters)

MultiValue Performance Experience / MVAdmin previously accepted only the first format. This is corrected in the v1.7.0 release.

For MVAdmin V1.4.0, V1.5.0, or V1.6.0 users, use the following workaround when attempting to reset your Keycloak client secrets or keystores:

1. Start MultiValue Performance Experience.
2. Contact Support as may be necessary to obtain copies of these three files: `kcauth`; `do-keycloak.sh`; and `scrambler.sh`. Then copy the three files to a local directory such as: `/tmp`. Next, type the following commands in sequence:

```
cd $MVX_HOME/data
cp /tmp/kcauth install
cp /tmp/scrambler.sh install
cp /tmp/do-keycloak.sh install
```

Note: In the first command above, you should replace `$MVX_HOME` with your own actual `data` directory. Also: Verify that the `install` sub-directory exists. If it does not, then create it.

3. Enter the Docker container by executing: `docker exec -it rocket-mvx /bin/sh`
4. Once you are in the Docker container, type the following commands in sequence:

```
cd mvx
cp data/install/kcauth data/config
cp data/install/scrambler.sh scripts
cp data/install/do-keycloak.sh scripts
```

5. Exit the Docker container.
6. type the following commands in sequence:

```
cd $MVX_HOME,  
mvx.sh (bat) config clientsecret
```

7. After typing the above commands, follow the prompt.

Note: In the event that you stop AND delete the Docker container (and then "load" or "run" again, you will need to repeat the workaround that is outlined above. Note that if you simply stop and start the Docker container, then the new files should remain in place.

MultiValue Performance Experience performance

Review and assess information to assist you to answer common questions surrounding MultiValue Performance Experience performance issues and challenges.

Question:

How many instances will MultiValue Performance Experience let me register, and where do I go to view them?

Answer:

To view the stand-alone **Instances** dashboard to get an **Instance List** overview for your registered MV instances, from the MultiValue Performance Experience primary navigation pane select **Instances**. Up to 100 Instances are certified for use on MultiValue Performance Experience: be aware that this load does not result in a noticeable performance impact. The **Instance List** sub-header appears together with a page showing each of your instances as tiles.

Question:

How many UniVerse / UniData servers can I connect to a single MultiValue Performance Experience?

Answer:

For a single MultiValue Performance Experience installation, the optimal limit is 10 managed UniVerse / UniData instances.

Question:

Is there a performance impact when running MultiValue Performance Experience?

Answer:

For a single MultiValue Performance Experience installation, up to 100 Instances are certified for use on MultiValue Performance Experience without a noticeable performance impact.

Question:

How can I understand what is happening with memory and CPU usage on my system?

Answer:

Use the **Host CPU/Memory** feature to gain insight into current memory and CPU usage on your system. This feature helps you to identify any issues currently impacting system performance.

The **Host CPU/Memory** tile refreshes the CPU data automatically every 3 seconds and the memory data every 60 seconds. This feature provides the following information:

-
- Current percentage of CPU in use
 - Percentage of memory in use for the system (Windows only)
 - Number process that are currently queued

The **CPU Utilization** table's **Total** row aggregates each percentage for each CPU on the system. This table refreshes the data automatically every 3 seconds. This feature provides the following information:

- Current percentage of User and System CPU usage
- Total CPU usage (representing the combined percentage of User and System CPU usage)
- Percentage of CPU usage that is currently idle
- I/O Wait percentage for each CPU on the system

The **Memory Utilization** table refreshes the data every 60 seconds. This feature provides the following information:

- Current physical and virtual memory being utilized (both as a percentage and in MB)
- Current physical and virtual memory that is free (in MB)
- Current Cache Size (or Pin - for AIX implementations)

The **Processes** table displays the 10 most active CPU and memory processes on the system. From the **PID** column, click the arrow (>) to display the top 10 CPU or Memory processes. This table automatically refreshes the data every 60 seconds. The feature provides the following information, depending upon your operating system:

Processes for Linux and AIX:

- Process ID (PID)
- Process Name (name and the location where the process is running)
- User Name of the user running the process
- Elapsed time that the process has been running
- Percentage of CPU and Memory being used for the process
- Amount of physical and virtual memory (in KB) being used for the process

Processes for Windows:

- Process ID (PID)
- Process Name (name and the location where the process is running)
- Elapsed time that the process has been running
- Percentage of CPU and Memory being used for the process
- Amount of physical and virtual memory (in KB) being used for the process
- Handle count
- Number of page faults per second

MultiValue Performance Experience and UniVerse / UniData database monitoring

Review and assess information to assist you to answer common questions surrounding MultiValue Performance Experience as applied to UniVerse and UniData database monitoring operations.

Question:

What version of UniVerse works with MultiValue Performance Experience for monitoring?

Answer:

MultiValue Performance Experience GA releases work only with UniVerse V11.3.4.9004, or higher levels of V11. MultiValue Performance Experience does not support UniVerse V12.

Question:

Can MultiValue Performance Experience be used to monitor UniData performance?

Answer:

Yes. MultiValue Performance Experience supports UniData V8.3.2.

Question:

Does MultiValue Performance Experience utilize shared memory segments on a monitored UniVerse database instance? How large is it?

Answer:

Yes, if you set the **PERF_MON_MODE** parameter in **uvconfig** to a value of 1, then MultiValue Performance Experience utilizes shared memory segments. For the size calculations, review the explanation that follows.

For the following default **uvconfig** parameters, UniVerse creates a performance shared memory of 16,487,632 bytes (16 MB):

- **PERF_MON_MODE**: This parameter specifies whether to enable performance monitoring. The default values are:
 - 0 - Disable performance monitoring.
 - 1 - Enable performance monitoring.
- **PERF_SYSTEM_SECTIONS**: This parameter defines the number of sections to be allocated for monitoring system-wide file statistics. The total number of files being monitored system-wide is **PERF_SYSTEM_SECTIONS * PERF_SYSTEM_FILES**. Note that you must set **PERF_MON_MODE** to a value of 1 for this parameter to take effect. The default value is 17.
- **PERF_SYSTEM_FILES**: This parameter is the number of files per section enabled for file statistics performance monitoring on a system-wide basis. You must set **PERF_MON_MODE** to a value of 1 for this parameter to take effect. The default value is 31.
- **PERF_SESSION_SECTIONS**: This parameter defines the number of sections to be allocated for monitoring file statistics on a session basis. The total number of files being monitored on a session basis is **PERF_SESSION_SECTIONS * PERF_SESSION_FILES**. You must set **PERF_MON_MODE** to a value of 1 for this parameter to take effect. The default value is 17.
- **PERF_SESSION_FILES**: This parameter is the number of files per section enabled for file statistics performance monitoring on a session basis. You must set **PERF_MON_MODE** to a value of 1 for this parameter to take effect. The default value is 31.

To calculate shared memory for system-wide file statistics, use this formula:

440 * the number of files to monitor

For example:

$440 * (31 * 17) = 231,880$ (0.2 MB)

To calculate shared memory for session file statistics, use this formula:

120 * the number of files to monitor * NUSERS

For example:

$120 * (31 * 17) * 256 = 16,189,440$ (15 MB)

MultiValue Performance Experience and UniVerse / UniData database registration

Review and assess information to you to answer common questions surrounding MultiValue Performance Experience and its relationship with UniVerse / UniData database registration.

Question:

Why does MultiValue Performance Experience need to be able to connect with Rocket Business Connect (RBC) in order to enable MultiValue Performance Experience to monitor a UniVerse / UniData database server?

Answer:

MultiValue Performance Experience requires a persistent internet connection with Rocket Business Connect (RBC) in order to function properly. MultiValue Performance Experience makes a call to RBC in order to register the MultiValue Performance Experience serial number and to check whether the UniVerse database server to be monitored is on Active Maintenance. If MultiValue Performance Experience is unable to establish and maintain an active connection with RBC, then MultiValue Performance Experience ceases to function after warning the user.

1. Click the **Your Account** icon, then select My Account.
2. From the **My Account Settings** dialog, select RBC Credentials.
3. Enter your RBC ID in the **RBC ID** field.
4. Enter your RBC password in the **RBC Password** field.
5. Click **Submit and Close** to authorize your system to access the Performance Experience.

Question:

If, as a MultiValue Performance Experience Administrator I need to re-install MVAdmin, what happens to my database instance registrations if I need to re-install MVAdmin on a UniVerse / UniData database server with a database instance that is defined in MultiValue Performance Experience?

Answer:

If, working as a MultiValue Performance Experience Administrator, you need to re-install the MVAdmin product component on an Universe / UniData database server and a database instance is defined in MultiValue Performance Experience, you must de-register that database instance in MultiValue Performance Experience. After doing so, you should again register the database instance- but (and this is important) register the instance only after the you reinstall MVAdmin.

If you do not de-register the defined database instance, the **Instance** tile generates errors after you reinstall MVAdmin. In such a scenario, MVAdmin is too unstable for use.

Review MVAdmin FAQs

Review and assess information to you to answer common questions that empower you to use MVAdmin in the most optimal way.

To review information to answer questions you may have about using MVAdmin, access the topic that is specific to a specific aspect of any MVAdmin feature.

- [MVAdmin installation and management](#)
- [MVAdmin logging](#)
- [MVAdmin performance](#)

MVAdmin installation and management

Review and assess information to you to answer common questions surrounding MVAdmin installations, upgrades, and general management.

Question:

How much disk space does MVAdmin occupy after installation?

Answer:

After installation completes, MVAdmin occupies approximately 200MB of disk space.

Question:

Into which files does MVAdmin write data? What accounts are created for data storage?

Answer:

MVAdmin creates a UniVerse account named MVXDB during installation which is used for saving and monitoring data. This account contains the following files:

- PERFHIST
- PERFEVENT
- PERFTASK
- PERFTREND

The **db.instance.snapshot.interval** property of the `dbinst_1.properties` file (located in the `MVAdmin` folder) sets MVAdmin's interval for updating the `PERFHIST` file. MVAdmin writes one record per interval to the `PERFHIST` file. A record contains a list of files, semaphores, locks, and other information obtained from the UVAgent. The default interval is 900 seconds (15 minutes). The written record can be large (more than 100K) in cases where there are many active sessions and opened UniVerse / UniData files. The `PERFHIST` file can grow quickly; however, MVAdmin only keeps the history data for a period of time before clearing the file. The **db.instance.snapshot.history** property defines this interval, and the `dbinst_1.properties` file's default value is 30 days.

When events occur, MVAdmin writes information about the events to the `PERFEVENT` file and updates these records as the event state changes. MVAdmin updates this file periodically. The update interval is set in seconds by the value you specify for the **db.instance.monitoring.interval** parameter in the `dbinst_1.properties` file. The default value is 60 seconds. The `PERFEVENT` file is typically not as large as the `PERFHIST` file and is not automatically cleared. You can clear it with the `CLEAR.FILE` command.

For task information associated to occurring trends such as license usage, MVAdmin writes data to the `PERFTASK` file. This file is not as large as the `PERFHIST` file, and is not automatically cleared. You can clear it with the `CLEAR.FILE` command.

MVAdmin logging

Review and assess information to you to answer common questions surrounding MVAdmin logging operations.

Question:

Does MVAdmin write data into log files?

Answer:

Yes, MVAdmin writes log files to the `MVAdmin/logs` folder. MVAdmin archives individual logs into the `archived` sub-folder. MVAdmin does not clear logs automatically. You as a user must manually clear the logs.

MVAdmin performance

Review and assess information to you to answer common questions surrounding MVAdmin performance issues and challenges.

Question:

How much CPU does MVAdmin consume on a database instance?

Answer:

MVAdmin consumes 0.2 - 0.5 percent under no load or a small load (such as: 20 events generated over a 10 - 15 minute period).

In an earlier release, some Beta customers reported that MVAdmin requires 5 percent of CPU time on a UNIX/Linux system with UniVerse idle. After the Beta for that release, improvements resulted in MAdmin using a significantly reduced CPU load.



Note: The Linux `top` command, which displays system monitoring statistics, runs by default in "Irix" mode - a mode that does not consider multiple cores. The "Solaris" mode considers multiple cores: to switch to "Solaris" mode, press the `Shift + I` keys. You should use the "Solaris" mode to obtain the correct data about CPU percentage that is consumed by the MVAdmin process. What follows are the results of testing MVAdmin on a Windows system with a single UniVerse user.

MVAdmin with no load:

- Average CPU 0.178 percent maximum: 18.373 percent during a 16 minute and 40 second period
- `db.instance.monitoring.interval` = 60 (every one minute check for events)
- `db.instance.snapshot.interval` = 900 (every 15 minutes add record to the history file)

MVAdmin under load (20 events were generated and processed during the test interval):

- Average CPU 0.423 percent maximum: 53.093 during a 16 minute and 40 second period
- `db.instance.monitoring.interval` = 60 (every one minute check for events)
- `db.instance.snapshot.interval` = 900 (every 15 minutes add record to the history file)

Note that on systems with multiple users and heavy load the CPU usage can increase.

How much memory does MVAdmin consume when running?

Answer:

MVAdmin's primary java process can consume between 0.5GB to 1.5GB of memory when it is running, based on observations of a test system with one active UniVerse user. The memory usage may be higher, depending upon the number of active sessions and open files.

What follows are data pulled from Performance Monitoring on a Windows system at different times during the MVAdmin lifecycle.

After starting the MVAdmin service on a Windows machine:

Process name: java.exe, owner SYSTEM

```
Working set (memory) ..... 954,148 K
Peak working set (memory) ..... 1,045,296 K
Memory (active private working set) ..... 942,160 K
Memory (shared working set) ..... 14,032 K
Commit size ..... 1,441,452 K
Paged pool ..... 161 K
Non Paged pool ..... 45 K
Handles ..... 634
```

After 30 minutes:

Process name: java.exe, owner SYSTEM

```
Working set (memory) ..... 1,147,724 K
Peak working set (memory) ..... 1,222,700 K
Memory (active private working set) ..... 1,118,820 K
Memory (shared working set) ..... 28,892 K
Commit size ..... 1,587,344 K
Paged pool ..... 156 K
Non Paged pool ..... 44 K
Handles ..... 624
```

After 12 hours:

Process name: java.exe, owner SYSTEM

```
Working set (memory) ..... 653,792 K
Peak working set (memory) ..... 1,222,700 K
Memory (active private working set) ..... 612,112 K
Memory (shared working set) ..... 41,492 K
Commit size ..... 972,824K
Paged pool ..... 156 K
Non Paged pool ..... 45 K
Handles ..... 624
```



Note: The working set of a program consists of a collection of those pages in its virtual address space that have been recently referenced. It includes both shared and private data. The shared data includes pages that contain all instructions that your application executes, including those in your DLLs and the system DLLs. As the working set size increases, so does the demand for memory.

A process has an associated minimum working set size and maximum working set size. Each time you call `CreateProcess`, it reserves the minimum working set size for the process. The virtual memory manager attempts to keep enough memory for the minimum working set resident when the process is active, yet keeps no more than the maximum size.

On Linux similar results are observed.

If less physical memory is available on the machine than is required by the MVAdmin java process, then the paging mechanism is used. Note that there is no need to always have 1.5GB available for MVAdmin. However, you should have 1.5GB of free memory available on your system for the MVAdmin process to run (and to avoid slowing it down). Keep in mind that if the number of sessions and active files are large, memory requirements do increase.

Question:

What network traffic does MVAdmin generate on a monitored UniVerse / UniData database instance? Can it affect overall network performance of the database instance?

Answer:

MVAdmin does generate some network traffic; however, such traffic is insignificant and should not affect the overall network performance of the database instance.

The MVAdmin server exposes a REST API through which the MVX server contacts it.

The MVX Server uses this API to get the monitoring data, set various monitoring parameters, control task execution, and perform other tasks.

The MVX server contacts each database instance that is being monitored at a regular interval to receive fresh monitoring data. The default value for the interval is 1 minute. This value is hardcoded into the UI: you cannot configure it.

Apart from serving requests initiated by the MVX Server, MVAdmin can initiate requests to the MVX Server to publish subscription data. The Kafka messaging service, which is installed in the same container with the MVX server, is used for that process. If Kafka is not available to receive requests (for example, when you stop the MVX container), then the MVAdmin thread responsible for sending the data continues attempting to send out the data. This should not negatively affect the performance of the database server.