



OpenLV Third Party Application Information Form

Document Version: 2983-PUBLIC-S002-V01.00.00
Date: July 2018

Version History

Date	Version	Author(s)	Notes
19/07/2018	00.00.01	James Slater	Initial Creation
20/07/2018	00.00.02	Caitlin Randles	Additional Comments
23/07/2018	00.00.03	Caitlin Randles	Merge of Forms
24/07/2018	00.00.04	Caitlin Randles	Additional Information
25/07/2018	00.00.05	Caitlin Randles	Additional Information
25/07/2018	00.01.00	Caitlin Randles	Additional Information
26/07/2018	00.01.01	James Slater	Update from comments
26/07/2018	01.00.00	Richard Ash	English corrections and approval for issue

Final Approval

Approval Type	Date	Version	EA Technology Issue Authority
Technical	2018/07/26	01.00.00	Richard Ash
Business	2018/07/26	01.00.00	Ana Duran

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1. Introduction

The Low Voltage Common Application Platform (LV-CAP) is a hardware agnostic software environment designed to accelerate the deployment of Smart Grid on electricity networks. The platform allows multiple “Smart” applications to be deployed on a single set of hardware and sensors, which all share data on an internal Data Marketplace.

This document should be used alongside the LV-CAP Developer Guide (2622-MANUL-S001-V02.02.02 *Developing for LV-CAP using the Virtual machine*) and LV-CAP Public API (2383-MANUL-V04.03.04 *LV Common Application Platform Public API*) as this document refers to both throughout.

2. Required information

Please see 2383-MANUL-V04.03.04 *LV Common Application Platform Public API* section 4.2 and 2622-MANUL-S001-V02.02.02 *Developing for LV-CAP using the Virtual machine* section 7.

2.1 Container Identification

Information	User Input
Vendor ID	
Application ID	

2.2 Certificate Signing Request File

Please see 2622-MANUL-S001-V02.02.02 *Developing for LV-CAP using the Virtual machine* section 7 and LV-CAP Public API 2383-MANUL-V04.03.04 *LV Common Application Platform Public API* section 4.2. To create a production Application, please submit the Certificate Signing Request (CSR) file for your Application. EA Technology will create the production Certificate file to be built into your Application.

2.3 User Guide

Please include the information listed below in your user guide. Please attach the guide and fill in the file name here:

- 1. Overview** (what the application will do)
- 2. Configuration** (inclusive of inputs and outputs)
- 3. Required Inputs** (what inputs are required for the Application to run)
- 4. Expected Outcomes** (what outputs should be produced inclusive of topics, frequency and the format of the payloads)
- 5. Run Duration** (how long it will take for the Application to go through all functions once)

3. How to Run the Application

Please refer to *2383-MANUL-V04.03.04 LV Common Application Platform Public API* section 9 for more general information on JSON object types.

3.1 Container Manager Config

Please refer to *2622-MANUL-S001-V02.02.02 Developing for LV-CAP using the Virtual machine* sections 5.2 - 6, as well as Appendix I.

Enter below the JSON Object that the Container Manager needs to run the Application, including the resource limit settings documented in the table overleaf.

JSON Option	Command Line Option	Description	Standard Setting	Required Setting & Justification
containerCPUShares	--cpu-shares=	Adjust the relative CPU share assigned to this Application.	1024	
containerCPUPeriod	--cpu-period=	Set the CPU CFS (Completely Fair Scheduler) period, in microseconds. This should be set in conjunction with --cpu-quota [2]	100000	Before you request more: This value will fairly divide up CPU resources
containerCPUQuota	--cpu-quota	Set the CPU CFS (Completely Fair Scheduler) quota, in microseconds. This should be set in conjunction with --cpu-period=	10000	Before you request more: This value will fairly divide up CPU resources
containerMemoryLimit	--memory=	Set the amount of (user-space) Random Access Memory the Application may use.	"100m"	
containerVolume	--volume		"/data"	
containerPrivileged	--privileged=	Give extended privileges to this container	false	

Please note that the memory limit defined above is RAM usage, and unrelated to the restrictions that have been placed on non-volatile disk storage used for the Application image.

See also:

- <https://docs.docker.com/engine/reference/run/#runtime-constraints-on-resources>
- https://goldmann.pl/blog/2014/09/11/resource-management-in-docker/#_cpu
- <https://www.kernel.org/doc/Documentation/scheduler/sched-bwc.txt>

3.1.1 Confirmation

Upon completion of section 3.1, please confirm below:

Description	Confirm
I have completed all fields and tables in section 3.1	<input type="checkbox"/>
<i>(Optional) If I have requested more resources, I have also included my applications requirements and justifications. I have also declared this in Section 4.1</i>	<input type="checkbox"/>

3.2 The Application Configuration Parameters

Please refer to 2622-MANUL-S001-V02.02.02 *Developing for LV-CAP using the Virtual machine* sections 5.2 - 6, as well as Appendix I.

Please provide a sample configuration to be used to test your Application and provide us with the full file name in the textbox below:

3.2.1 Confirmation

Upon completion of section 3.2, please confirm the following:

Description	Confirm
I have enclosed details of a sample configuration	<input type="checkbox"/>
The sample I have provided can be tested in a realistic way	<input type="checkbox"/>
I am now able to confirm information within sections 4.1 and 4.2	<input type="checkbox"/>

3.3 Testing

EA Technology will need to be able to test run your Application as part of the Approval process. This requires a set of test inputs, and sufficient information about the Application's outputs so that we can confirm correct operation. The tests will be carried out using the Container Manager configuration supplied in section 3.1 and the Application configuration supplied in section 3.2.

The purpose of these tests is to confirm that the Application integrates into the LV-CAP platform correctly. The EA Technology tests are not designed to determine whether the Application outputs are correct, or to demonstrate that it meets the customer's requirements. As such we will only check for the presence of the declared outputs, not whether their values are correct.

3.3.1 Testing Input

Test input can be provided in one of two forms:

1. A CSV file which can be played back using the play_csv.py script as described in *2622 - LV-CAP Developer Guide section 9.3.3*.
2. A list of JSON messages to be manually published on specified topics at specified times when carrying out the test.

EA Technology would strongly prefer a CSV file for testing, however a listing of input messages is also acceptable. In either case we need to know how long the Application should be run for in order to produce its full set of outputs and functions and carry out the test (this is also requested in section 2.3 of this document).

If you provide a CSV file, please put the file name in the table below as well, and whether the test can be carried out with the file played back in faster than real time. Otherwise, please list all required inputs in the table below.

Topic	Frequency/ Time (seconds)	Value	JSON Object type
CSV File Name (or Input 1)			
Input 2...			

3.3.2 Testing Output

This table must be populated with the expected outputs of your application. For details of standard JSON object types, please refer to 2383-MANUL-V04.03.04 LV Common Application Platform Public API section 9.

Topic	Frequency/ Time (seconds)	Overall Application Run-Time	JSON Object type
Output 1			
Output 2...			

3.3.3 Confirmation

Description	Confirm
I have completed all fields and tables in section 3.3 and enclosed any requested files	<input type="checkbox"/>
The inputs and outputs I have provided match the configuration I provided	<input type="checkbox"/>
I have explained the expected outcomes of the inputs and demonstrated that they match the actual results	<input type="checkbox"/>
I have now completed sections 4.1 and 4.2	<input type="checkbox"/>

4. Checklist

4.1 Best Practise

Description	Confirm	Justification (if unchecked)
I can confirm our application subscribes to specific source data topics as opposed to using the '#' & '?' wild card operators.	<input type="checkbox"/>	
The Application does not require any additional services from LV-CAP.	<input type="checkbox"/>	e.g. additional ports, additional resources etc

4.2 Security

Description	Confirm	Justification (if unchecked)
I confirm our application does not attempt to publish or subscribe to unauthorised topics	<input type="checkbox"/>	
I confirm that our application does not require any elevated privileges	<input type="checkbox"/>	
I confirm that our application does not attempt to communicate with external hardware or services (nodes, internet, etc)	<input type="checkbox"/>	e.g. dedicated comms app

4.3 Compliance

Description	Confirm
I can confirm I have detailed all required information on this form	<input type="checkbox"/>
I can confirm all documentation has been enclosed alongside this form	<input type="checkbox"/>
I can confirm any discrepancies from EA's requirements have been justified and backed up with examples	<input type="checkbox"/>
Once all other sections have been completed; I can confirm I have enclosed a suitable sample configuration which will run in a realistic way	<input type="checkbox"/>

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