

EdgeX Foundry - Stage 3 - 2023-09-06

Completed by: Jim White, IOTech Systems

Submitted to TAC Mail List: 2023/9/6

Presented on TAC Weekly Call: 2023/9/6 (Meeting Recording)

Below is a self-assessment submitted by TSC Chair/Maintainers of the Project. Comments/questions/feedback is welcome either a) in the Comments at the bottom of the page or b) during the TAC call when information is presented

Stage 1: At Large Projects

Stage 2 and Stage 3 Projects also requested to complete this section, as PLD acceptance criteria requires meeting current as well as prior stage requirements


2 T A C S p o n s o r s , if id e n t i f i e d (S p o n s o r s h e l p m e n t o r p r o j e c t s) - S e e f u l l d e f i n i t i o n o n P	M e e t i n g s	Joe Pearson (IBM), Trevor Conn (Dell)
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T h e e t y p i c a l I P P o l i c y f o r P r o j e c t s u n d e r t h e L F E d g e F o u n d a t i o n i s A p a	M e t a	<p>EdgeX is an Apache 2.0 license project. We require all contributions comply with this license agreement as stated in our Wiki below. https://wiki.edgexfoundry.org/pages/viewpage.action?pagelD=21823866</p> <p>EdgeX policy to review new libs, modules, etc. brought into the project to insure anything we use (or is used indirectly by modules we bring in) is c with this license. https://wiki.edgexfoundry.org/display/FA/Vetting+Process+for+3rd+Party+Dependencies</p> <p>We also conduct code scans regularly (with each PR) for any license compliance issues.</p>
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Displayed proudly on the EdgeX wiki home page:



LF Edge Stage 3 (Impact Stage) Project

EdgeX Foundry is an impact stage project under the [LF Edge](#) umbrella project. LF Edge aims to establish an open, interoperable framework for edge computing index in LF Edge are those that have reached their growth goals and are now on a self-sustaining cycle of development, maintenance, and long-term support.

<https://wiki.edgexfoundry.org/display/FA/EdgeX+Foundry+Project+Wiki>

Also on our website:

Ecosystem Overview

EdgeX Foundry is an open source stage 3/impact project under the LF Edge umbrella. The LF Edge projects create a unified Open Source Edge community that seeks to foster collaboration across industries and harmonization across Edge projects.

<https://www.edgexfoundry.org/>

Stage 1 Projects, please skip to **Additional Information Requested from All Projects**

Stage 2: Growth Stage

Stage 3 Projects also requested to complete this section

Development of a growth plan (to include both roadmap of projected feature sets as well as overall community growth/project maturity), to be done in conjunction with their project mentor(s) at the TAC.	Meets	<p>We maintain a roadmap for the next 2 years and have a long term backlog that extends beyond that timeframe. The next couple of releases are documented with pages in our Wiki (and you can see past release roadmaps) here: https://wiki.edgexfoundry.org/display/FA/Roadmap.</p> <p>Minor fixes and enhancements are also captured in issues with each repository in Github. Github tags are used to label bugs from enhancement requests and when appropriate are associated with a specific target release.</p>
Document that it is being used in POCs.	Meets	<p>EdgeX is used in countless POCs worldwide so this list is actually more about production uses.</p> <ul style="list-style-type: none"> Companies announced use of EdgeX in their products include Accenture (AIP+ product), ThunderSoft (TurboX), Jiangxing Intelligence (EdgeBox), and Tibco (Project Air), HP (Engage Edge), Advantech, UST Global. Many of the company presentations to the EdgeX community can be found at the wiki site below. https://wiki.edgexfoundry.org/display/FA/Vertical+Solutions+Working+Group#VerticalSolutionsWorkingGroup-MeetingMinutes Eaton's use of EdgeX is documented in an LF Edge Use Case publication of 2023 found here. HP's announcement is found here: https://press.hp.com/us/en/blogs/2020/hp-unveils-hp-engage-edge.html IOtech Systems also provides a commercial implementation of EdgeX called Edge Xpert and uses that is several POC and customer projects around the globe. https://www.iotechsys.com/our-products/edge-software-platforms/edge-xpert/
Demonstrate a substantial ongoing flow of commits and merged contributions.	Meets	Collected from LF Insights for the project since inception and for the last 1 year

<table><tr><td>Contributors</td><td>729</td><td>199</td></tr><tr><td>Pull requests</td><td>10441</td><td>1863</td></tr><tr><td>Reviewers</td><td>167</td><td>59</td></tr></table>			Contributors	729	199	Pull requests	10441	1863	Reviewers	167	59		
Contributors	729	199											
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Demonstrate that the current level of community participation is sufficient to meet the goals outlined in the growth plan.	Meets	<p>12 successful project releases since April 2017 (2 each year)</p> <ul style="list-style-type: none">EdgeX 2.3 (Levski) was released on Nov 9th 2022EdgeX 3.0 (Minnesota) was released on May 31th, 2023 (EdgeX's 3rd major release) <p>On track for two more releases in the next year: 3.1 (code named Napa) in fall of 2023, and a likely our second LTS release. The spring of 2023 will release "Odessa." It may be a dot release (to be determined).</p>											
Demonstrate evidence of, or a plan for, interoperability, compatibility or extension to other LF Edge Projects. Examples may include demonstrating modularity (ability to swap in components between projects).	Meets	<ul style="list-style-type: none">Integration of (and support to) new LF Edge project NanoMQ.Currently working with Alvarium to provide an EdgeX demonstration/integration project (due ~ late fall 2023)<ul style="list-style-type: none">See TSC meeting minutes with regard to design and action plan.Integration Akraino ELIOT blueprint (tested using UNH lab)Incubation of Open Horizon projectInclusion in the Open Retail Reference Architecture (with Open Horizons, and SDO)<ul style="list-style-type: none">Recent efforts to incorporate into IBM/Intel/Scale Computing and others demonstration lab used in a retail theft/loss prevention demonstration.Accomplished Baetyl/EdgeX integration (work accomplished in PRC). See Updates of EdgeX-Baetyl collaboration attempts-v0.1.pptxCollaboration with and use within EdgeX of eKuiper (formerly Kuiper) projectFledge export connector											

Stage 2 Projects, please skip to **Additional Information Requested from All Projects**

Stage 3: Impact Stage

Have a defined governing body of at least 5 or more members (owners and core maintainers), of which no more than 1/3 is affiliated with the same employer. In the case there are 5 governing members, 2 may be from the same employer.	Meets	<p>Our current TSC is comprised of members from Intel, Canonical, IOTech, HP, Eaton, Oracle, and Beechwoods. For names and details see: https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=88212178</p> <p>Each TSC group continues to be a good mix of experienced EdgeX leaders with new members and organizations becoming involved.</p>
Have a documented and publicly accessible description of the project's governance, decision-making, and release processes.	Meets	<p>Matters of project governance, decision making and process are covered in our project Wiki. The following pages outline our policies. Matters of technical decisions and voting process and rules are defined here: https://wiki.edgexfoundry.org/display/FA/Technical+Work+in+the+EdgeX+Foundry+Project</p> <p>Guidance for how to submit code contributions is defined here: https://wiki.edgexfoundry.org/display/FA/Contributor%27s+Guide and here: https://wiki.edgexfoundry.org/display/FA/Contributor%27s+Process</p> <p>Documentation on how our release process and what gets released is here: https://wiki.edgexfoundry.org/display/FA/Release+Process and some additional information on what is considered a release artefact is defined here: https://docs.edgexfoundry.org/1.2/design/adr/devops/0007-Release-Automation/</p> <p>Significant new features are discussed via TSC approved Use Case Review (UCR) process to better refine the way in which new requirements are defined, and the Architectural Decision Records (ADR) stage of the design.</p>
Have a healthy number of committers from at least two organizations. A committer is defined as someone with the commit bit; i.e., someone who can accept contributions to some or all of the project.	Meets	<p>Work group chairs automatically have committer rights to their work group repositories and nominate others as committers as spelled out in our governance here: https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=21823860#Contributors,Committers&Maintainers-NominationandApprovalofMaintainersandCommitters</p> <p>Each repository has at least 2 committers. The most used repository has 100 contributors and 19 committers (https://github.com/edgexfoundry/edgex-go/graphs/contributors)</p>
Demonstrate evidence of interoperability, compatibility or extension to other LF Edge Projects. Examples may include demonstrating modularity (ability to swap in components between projects).	Meets	<ul style="list-style-type: none"> • Integration of (and support to) new LF Edge project NanoMQ. • Currently working with Alvarium to provide an EdgeX demonstration /integration project (due ~ late fall 2023) <ul style="list-style-type: none"> ◦ See TSC meeting minutes with regard to design and action plan. • Integration Akraio ELIOT blueprint (tested using UNH lab) • Incubation of Open Horizon project • Inclusion in the Open Retail Reference Architecture (with Open Horizons, and SDO) <ul style="list-style-type: none"> ◦ Recent efforts to incorporate into IBM/Intel/Scale Computing and others demonstration lab used in a retail theft/loss prevention demonstration. • Accomplished Baetyl/EdgeX integration (work accomplished in PRC). See Up dates of EdgeX-Baetyl collaboration attempts-v0.1.pptx • Collaboration with and use within EdgeX of eKuiper (formerly Kuiper) project • Fledge export connector
Adopt the Foundation Code of Conduct.	Meets	<p>For any significant community meeting such as the TSC meetings or meeting where we are inviting outside community to speak or observe are always preceded by the code of conduct and anti-trust policy statements. To date, we have had no unacceptable behavior incidents that the project has been made aware of.</p> <p>EdgeX adheres to, follows and enforces the LF Edge Code of Conduct without addendum today.</p> <p>https://wiki.edgexfoundry.org/display/FA/Code+of+Conduct</p>
Explicitly define a project governance and committer process. This is preferably laid out in a GOVERNANCE.md file and references a CONTRIBUTING.md and OWNERS.md file showing the current and emeritus committers.	Meets	<p>Examples of these documents can be found in our main repository https://github.com/edgexfoundry/edgex-go</p> <p>Additionally, project governance and committer process is fully documented in our Wiki. Existing governance and contributor pages are located on this page and its subpages: https://wiki.edgexfoundry.org/display/FA/Technical+Work+in+the+EdgeX+Foundry+Project And here: https://wiki.edgexfoundry.org/display/FA/Contributor%27s+Guide</p>

Have a public list of project adopters for at least the primary repo (e.g., ADOPTERS.md or logos on the project website).	M e e ts	<p>Our main repository contains the Adopter document (see https://github.com/edgexfoundry/edgex-go/blob/main/ADOPTERS.md)</p> <p>We also highlight user, adopters and commercial interests of EdgeX on our Website.</p> <ul style="list-style-type: none"> • https://www.edgexfoundry.org/ecosystem/users/ • https://www.edgexfoundry.org/ecosystem/adopter-series/ • https://www.edgexfoundry.org/ecosystem/members/
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Additional Information Requested from All Projects

Intention for the upcoming year (Remain at current stage OR advance towards the next Stage)	Remain Impact Project, release our second LTS
Include a link to your project's LFX Insights page. We will be looking for signs of consistent or increasing contribution activity. Please feel free to add commentary to add color to the numbers and graphs we will see on Insights.	https://insights.lfx.linuxfoundation.org/projects/lfedge%2Fedgex-foundry/dashboard;quicktime=time_filter_3Y
How many maintainers do you have, and which organizations are they from? (Feel free to link to an existing MAINTAINERS file if appropriate.)	<p>https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=21823860</p> <p>WG Chair are maintainers of their respective repositories with additional rights to nominate others (which often happens). Therefore we have at least 9 maintainers. Most WG Chairs nominate several maintainers to help with the workload of the incoming code reviews. For example, the main service repository has 19 maintainers/committers (see https://github.com/orgs/edgexfoundry/teams/edgex-go-committers/members). A small effort/repository may only have a few maintainers.</p>
What do you know about adoption, and how has this changed since your last review / since you joined the current Stage? If you can list companies that are end users of your project, please do so. (Feel free to link to an existing ADOPTERS file if appropriate.)	<p>We are learning about new adopters all the time. In addition to the companies that are participating in the construction of EdgeX, the following companies have announced (and presented) on EdgeX adoption:</p> <ul style="list-style-type: none"> • Canonical, IOTech, HP, Thundersoft, Jiangxing Intelligence, Tibco and Accenture <p>Many organizations have adopted, adopting or are considering the adoption of EdgeX and related products including:</p> <ul style="list-style-type: none"> • Wartsilla, Schneider Electric, NetEase Technology, Fanmi Technology, Danfoss, Oracle <p>Others who have adopted EdgeX and related products:</p> <ul style="list-style-type: none"> • Large energy/oil company, Large power supply company, large building automation company, large events and venue management company, etc
How has the project performed against its goals since the last review? (We won't penalize you if your goals changed for good reasons.)	<p>Met or exceeded goals. Over 9 million container downloads. Regular releases for 6+ years, including the 3rd major release, second Long Term Support coming this year, indicating the stability of EdgeX to the marketplace.</p> <p>Per our plan, we moved from Slack to Github discussions. Slack has the 10K limit and is not good for historical searches.</p> <p>Travel restrictions / travel budgets still hamper the project's ability to have face-to-face meetings, but we did manage to hold a couple of virtual hackathons.</p>
What are the current goals of the project? For example, are you working on major new features? Or are you concentrating on adoption or documentation?	<p>Working on a LTS release targeted for fall 2023 with a likely minor release for spring of 2024 (dependent on some external aspects such as embedded products and move to BSL).</p> <p>Looking to continue to grow the user base with more publicly referenced adopters. Integration to some very large scale customers and industrial use cases.</p>
How can LF Edge help you achieve your upcoming goals?	<p>We have to explore joint live events for 2024.</p> <p>Join with other organizations looking to improve dev advocacy through hackathons, badging, and other programs.</p>
Do you think that your project meets the criteria for the next Stage?	We are at stage 3

<p>Please summarize Outreach Activities in which the Project has participated in (e.g. Participation in conferences, seminars, speaking engagements, meetups, etc.)</p>	<ul style="list-style-type: none"> • Prior to COVID, regular participation at Hannover Messe, IOT SWC, IOT World and LF events. Our members have spoken frequently at live events all over the world. Restrictions (budget more than COVID restrictions today) mean that virtual events are more commonplace. We hope live/face-to-face events will be in scope for 2024 (especially a semi-annual TSC planning event) • Intel sponsored student Hackathon (just completing in fall 2023) • EdgeX presented sessions at ONES 2022 in Seattle in November 2022. EdgeX will present at the OneSummit China in Sept 2023. • China continue to enjoy excellent EdgeX participation events with their now annual China EdgeX Challenge • The EdgeX community took ownership of social media starting in Feb 2023.
<p>Are you leveraging the Technical Project Getting Started Checklist? If yes, please provide link (if publicly available).</p>	<p>This was developed after our project launched, but we already follow all steps.</p>
<p>Please review, and update if needed, your Project entry on the Existing Project Taxonomy page, modifying the Last Updated / Reviewed date in the header.</p>	<p>Updated 9/5/23 by Jim White</p>
<p>Please share a LFX security report for your project in the last 30 days</p>	<p>https://security.lfx.linuxfoundation.org/#/a0941000005osNnAAI/overview Issues remain with LF over the accuracy of this system. Attempts to get it corrected have never materialized despite repeated attempts and tickets.</p>