



vFunction 4.0.0 Release Notes

Key Additions

- **A New Lifecycle for Architecture as Code for Distributed Architectures**

Architects can now use vFunction to compare C4 diagrams with the actual application architecture, request changes, generate updated C4 diagrams and more. [Learn More.](#)

- **Architecture Audit Log**

A new audit log, to log decisions made by architects on the vFunction system, adds transparency and traceability over generated TODOs and target architectures.

- **Create JIRA Tickets from TODOs**

Added the ability to create JIRA tickets directly from the vFunction TODO Dashboard. [Learn More.](#)



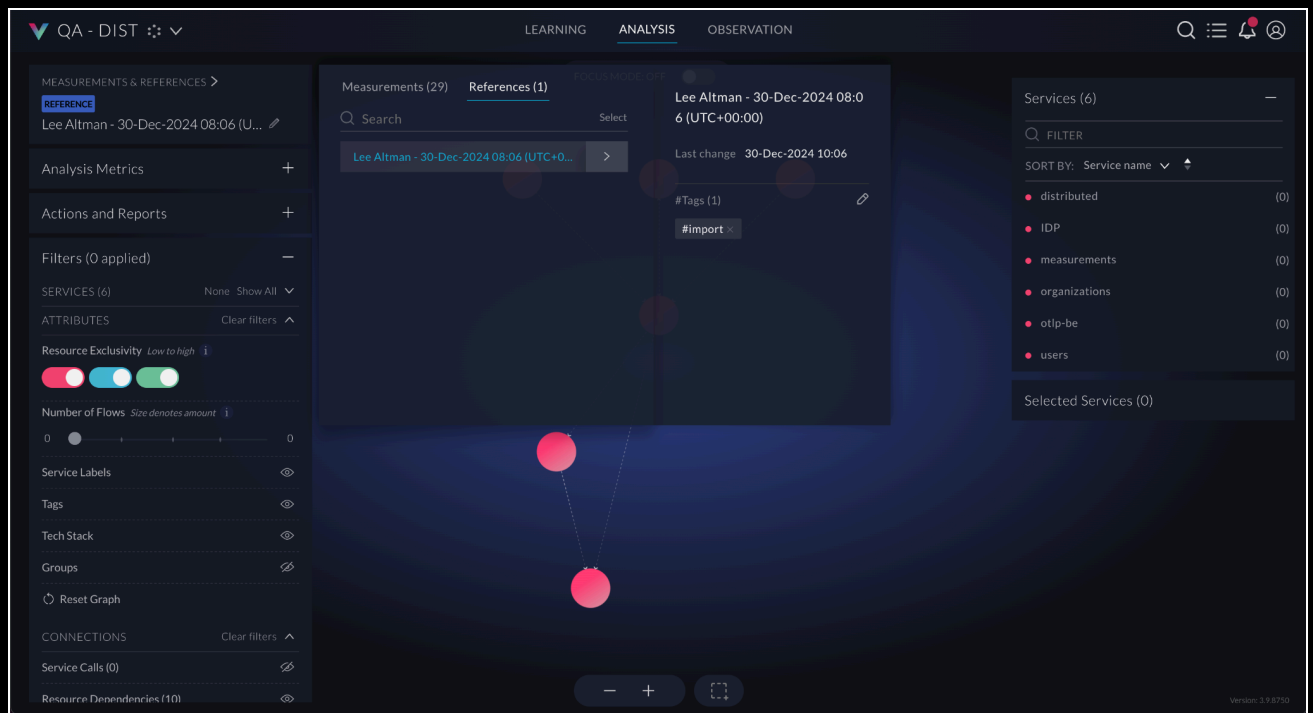
New Lifecycle for Architecture as Code

Import and Export C4 Container Diagrams

Users can export a measurement generated based on OTEL data as a C4 Container diagram. These diagrams can be edited as code, and imported back to vFunction to iterate on architectural planning, generating prescriptive TODOs for engineers to change the architecture to whatever was planned.

Users can also import their existing diagrams to see the difference between existing and documented architectures, and can automatically generate documentation required for compliance.

Uploaded diagrams create a Reference Architecture visible in the Measurements list. Users can mark a reference as the "Latest Reference", and differences between the latest reference and actual architecture generate actionable TODOs.





Grouping Services

Grouping services is supported for grouping services/containers with attributes such as name, tags, and annotations. These tags can be imported from C4 diagrams, and can be used in Architecture Rules to apply standards and patterns and to manage architectural drift.

The screenshot displays the vFunction ANALYSIS interface. The top navigation bar includes 'LEARNING', 'ANALYSIS', and 'OBSERVATION'. The main area shows a service graph with several red circular nodes connected by dashed lines. A blue rectangular box highlights a group of three nodes. On the left, a sidebar contains various filters and controls, including 'MEASUREMENTS & REFERENCES', 'Analysis Metrics', 'Actions and Reports', 'Filters (0 applied)', 'SERVICES (6)', 'ATTRIBUTES', 'Resource Exclusivity', 'Number of Flows', 'Service Labels', 'Tags', 'Tech Stack', 'Groups', 'Reset Graph', 'CONNECTIONS', 'Service Calls (0)', and 'Resource Dependencies (10)'. On the right, a 'Services (6)' panel lists attributes: distributed (0), IDP (0), measurements (0), organizations (0), otip-be (0), and users (0). The bottom right corner shows the version number 'Version: 3.9.8750'.



Distributed Application Improvements

- **Errors in Flows**

Sequence diagrams now display flows that resulted in errors, and are categorized as green (OK) or red (Error), with users able to toggle between them and see the number of calls and errors for each flow. Users can see the entire sequence that resulted in an error.

Error rates, calculated and displayed as percentages, with flows above 10% error rate highlighted. Users can sort flows based on error rates.

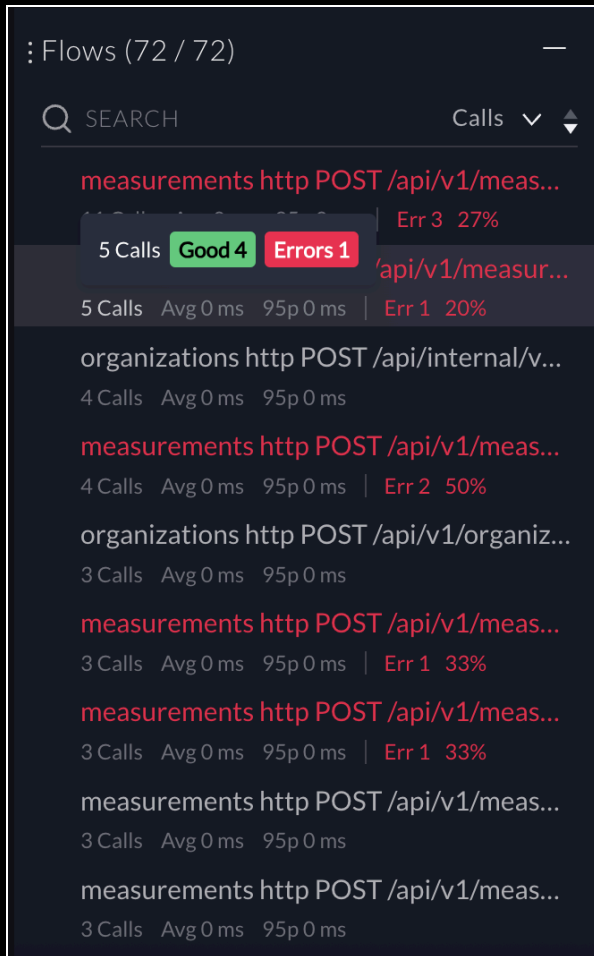
The screenshot displays the vFunction QA-DIST interface. On the left, a list of flows is shown with their respective metrics:

- measurements http POST /api/v1/meas... (11 Calls, Avg 0 ms, 95p 0 ms, Err 3 27%)
- measurements http GET /api/v1/measur... (5 Calls, Avg 0 ms, 95p 0 ms, Err 1 20%)
- organizations http POST /api/internal/v... (4 Calls, Avg 0 ms, 95p 0 ms)
- measurements http POST /api/v1/meas... (4 Calls, Avg 0 ms, 95p 0 ms, Err 2 50%)
- organizations http POST /api/v1/organiz... (3 Calls, Avg 0 ms, 95p 0 ms)
- measurements http POST /api/v1/meas... (3 Calls, Avg 0 ms, 95p 0 ms, Err 1 33%)
- measurements http POST /api/v1/meas... (3 Calls, Avg 0 ms, 95p 0 ms, Err 1 33%)
- measurements http POST /api/v1/meas... (3 Calls, Avg 0 ms, 95p 0 ms)
- measurements http POST /api/v1/meas... (3 Calls, Avg 0 ms, 95p 0 ms)
- POST /authorize (2 Calls, Avg 0 ms, 95p 0 ms, Err 2 100%)
- organizations http POST /api/v1/organiz...

The central sequence diagram shows a flow from a Consumer to a measurements service (GET /api/v1/measurements/id), which then calls an organizations service (GET /api/v1/organizations/applications/measurements/id). A red dashed arrow indicates a 404 error response from the organizations service back to the measurements service.

- **Flow Performance Measuring**

Added the average performance and 95th percentile performance for each flow along with the ability to sort flows by performance. Users can sort flows based on these stats.



- **Added support for MQ and RPC as resources and dependencies in Distributed Architectures.**

MQ resources (such as Rabbit MQ) and RPC resources (such as gRPC) now appear in the Resource and Endpoint filters when detected.

- **Enhanced Visibility of Connected Agents**

The NEW MEASUREMENT page now indicates the current number of connected agents actively sending telemetry data. Users can view agent IPs, tags, and last update timestamps.



Agents Info ✕

Search

IP	Last Update	Tags
172.31.46.110	31-Dec-2024 14:50:45	#4Cort
172.31.36.195	31-Dec-2024 14:51:12	#4Cort

Observability Improvements

- **Create JIRA Tickets from TODOS**

Each TODO now includes a "Create Ticket" button which creates a JIRA ticket to the TODO, enabling updates and synchronization.

- Each TODO now includes an "Open Ticket" button.
- When a ticket is created, a link to the JIRA issue is added to the TODO and its status can be seen within vFunction.
- Status changes (e.g., TODO marked as Done) create comments on the linked JIRA issue.

My Dashboard | **TODOS - 84848 of 84982** (5 Filters Applied) | GROUP BY: Application | Export CSV

Priority	Date	Event	Details	Domains / Services	Jira
High	01-Dec-2024 11:58	Loop	/service/inventory/multi-create (POST)	oms-inventory, oms	

oms-dist-errors Baseline measurement: -26-Nov-2024 15:51 (UTC+00:00) | Latest measurement: -26-Nov-2024 15:52 (UTC+00:00) | TODO: 11 | DONE: 157

Loop within distributed flow add a lot of latency and should be refactoring to a single call.
 Calling Service: oms-inventory
 Called Service: oms
 Flow: /service/inventory/multi-create (POST)
 Effort Estimation: Medium

JIRA Ticket: VFUN-195 : Loop in /Service/inventory/multi-create (POST)
 Add appropriate termination conditions or safeguards in the /Service/inventory/multi-create (POST) endpoint logic to prevent infinite iteration or recursion.
 Status: Open | Type: Story | Lee Altman | Priority: High

Baseline measurement: -26-Nov-2024 15:51 (UTC+00:00)
 Latest measurement: -26-Nov-2024 15:52 (UTC+00:00)

Priority	Date	Event	Details	Domains / Services	Jira
High	01-Dec-2024 11:58	Loop	/service/product/inv-desc[?text]	oms-product, oms-inventory	
High	01-Dec-2024 11:58	Loop	/service/product/inv-desc[?text]	oms-product, oms-shipping	
High	26-Nov-2024 17:48	Recommended Refactoring		oms, oms-shipping	
High	26-Nov-2024 17:48	Flow Removed	/service/product/inv/[productId]	oms-product, oms, oms-inventory, oms-shipping	
High	26-Nov-2024 17:48	Flow Removed	/service/product/inv/[productId] [GET] [failed]	oms-shipping, oms-inventory, oms-product	
High	26-Nov-2024 17:47	Flow Added	/service/product/name/[productName]		

Buttons: Acknowledge, Locate, **Open Ticket**



To enable Jira go to My Team > Configure Apps, where admins can provide JIRA credentials and a base URL.

- **Architecture Audit Log**

Added a Logs section in the UI to record architectural decisions made on TODOs and provide the following information

- **Action:** Actions like adding or dismissing TODOs, uploading references, changing baselines, and setting the latest measurement. Only impactful actions are logged, excluding routine auto-generated TODOs or completed TODOs.
- **Details:** Affected entities with context for the action.
- **User:** The user responsible for the decision.
- **DateTime:** Timestamp of the decision.
- **Comment:** Users can provide editable comments to document their reasoning.

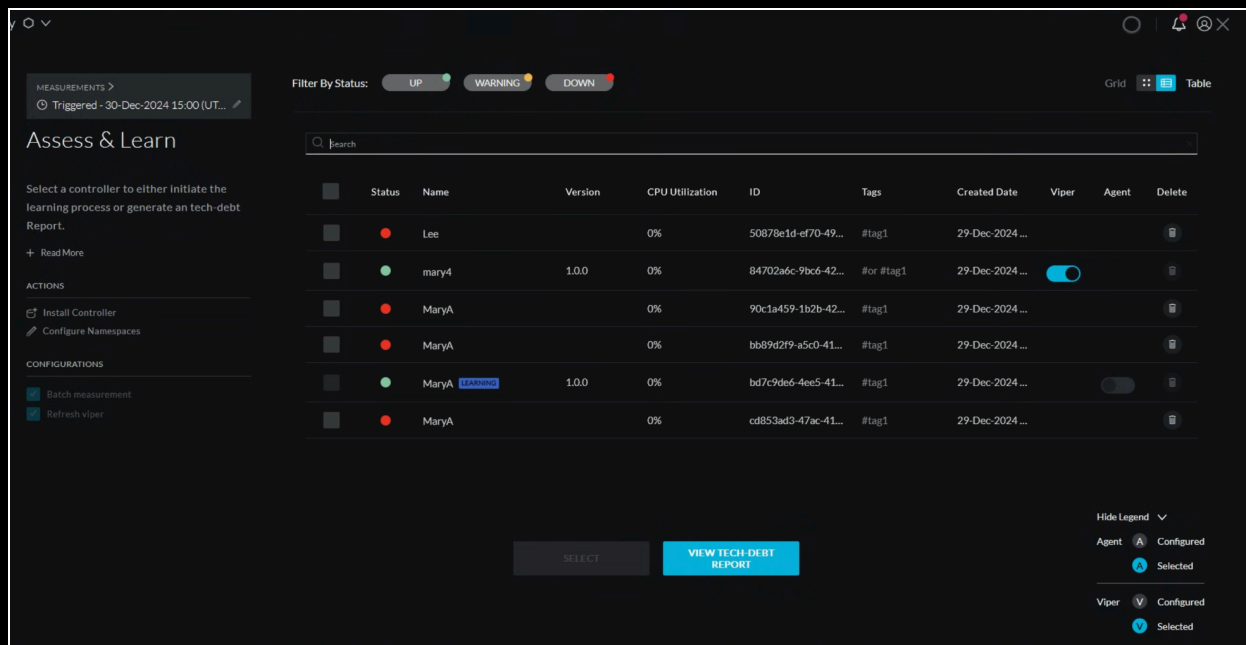
Audit Log - QA - DIST					Export CSV
Search				Sort By: Time	
Time	Action	Details	User	Comment	
09-Dec-2024 09:48:57	Settings Changed		mariana@vfunction.com		
09-Dec-2024 09:48:58	Settings Changed		mariana@vfunction.com		
09-Dec-2024 09:48:58	Baseline Measurement Changed	Mariana Sofianik - 15 Sep 2024 ...	mariana@vfunction.com		+
09-Dec-2024 10:22:50	Settings Changed		mariana@vfunction.com		
09-Dec-2024 10:22:51	Baseline Measurement Changed	Or Gershoni - 10-Nov-2024 14:...	mariana@vfunction.com		+
09-Dec-2024 13:09:15	Settings Changed		mariana@vfunction.com		
09-Dec-2024 13:09:16	Settings Changed		mariana@vfunction.com		
09-Dec-2024 13:09:16	Baseline Measurement Changed	Mariana Sofianik - 15 Sep 2024 ...	mariana@vfunction.com		+
09-Dec-2024 13:15:43	Latest Measurement Changed	Scheduled - 09-Dec-2024 11:10 ...			+



Usability Improvements

- **Improved Table View for Controller Management for Monolithic Applications**

Enhanced the table view for Controller Management with better visibility and usability. Added a sorting option, and a new search box for simplified finding controllers by name. Improved responsiveness ensures a better experience across devices.



The screenshot shows a web interface for Controller Management. At the top, there are filters for 'UP', 'WARNING', and 'DOWN'. A search bar is present above the table. The table has the following columns: Status, Name, Version, CPU Utilization, ID, Tags, Created Date, Viper, Agent, and Delete. The data rows are as follows:

Status	Name	Version	CPU Utilization	ID	Tags	Created Date	Viper	Agent	Delete
UP	Lee		0%	50878e1d-ef70-49...	#tag1	29-Dec-2024 ...			
UP	mary4	1.0.0	0%	84702a6c-9bc6-42...	#or #tag1	29-Dec-2024 ...	ON		
UP	MaryA		0%	90c1a459-1b2b-42...	#tag1	29-Dec-2024 ...			
UP	MaryA		0%	bb89d2f9-a5c0-41...	#tag1	29-Dec-2024 ...			
WARNING	MaryA	1.0.0	0%	bd7c9de6-4ee5-41...	#tag1	29-Dec-2024 ...	OFF		
UP	MaryA		0%	cd853ad3-47ac-41...	#tag1	29-Dec-2024 ...			

At the bottom of the table, there are 'SELECT' and 'VIEW TECH-DEBT REPORT' buttons. On the right side, there is a 'Hide Legend' section with 'Agent' and 'Viper' status indicators.

- **Set Measurement as Latest During Import**

Added an option to mark a measurement or a reference as the latest one from the import screen. The option is visible only when a baseline is already set and is disabled by default.

- **Recently-Visited Applications in the Menu**

Introduced a "Recently-Visited" section in the application menu, allowing users to quickly access their recently visited applications.



Installation Improvements

- **No More Controllers**

There is no longer a need for the controller process for .NET agents and Vipers, allowing for simpler installation on cloud environments such as Azure App Service, etc. Upgrading the agent supports a smooth transition from previous versions.

Extraction Improvements

- Automatically adding OpenTelemetry for extracted Spring boot services
- Improved .NET code-copy: improved handling of class definition and project.