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vmagent High-Availability Examples

by [Yurii Kravets](#) on May 10, 2022

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vmagent supports both the pushing and pulling (scrape) of metrics and here are examples of high availability setups for both cases.

Push and High Availability

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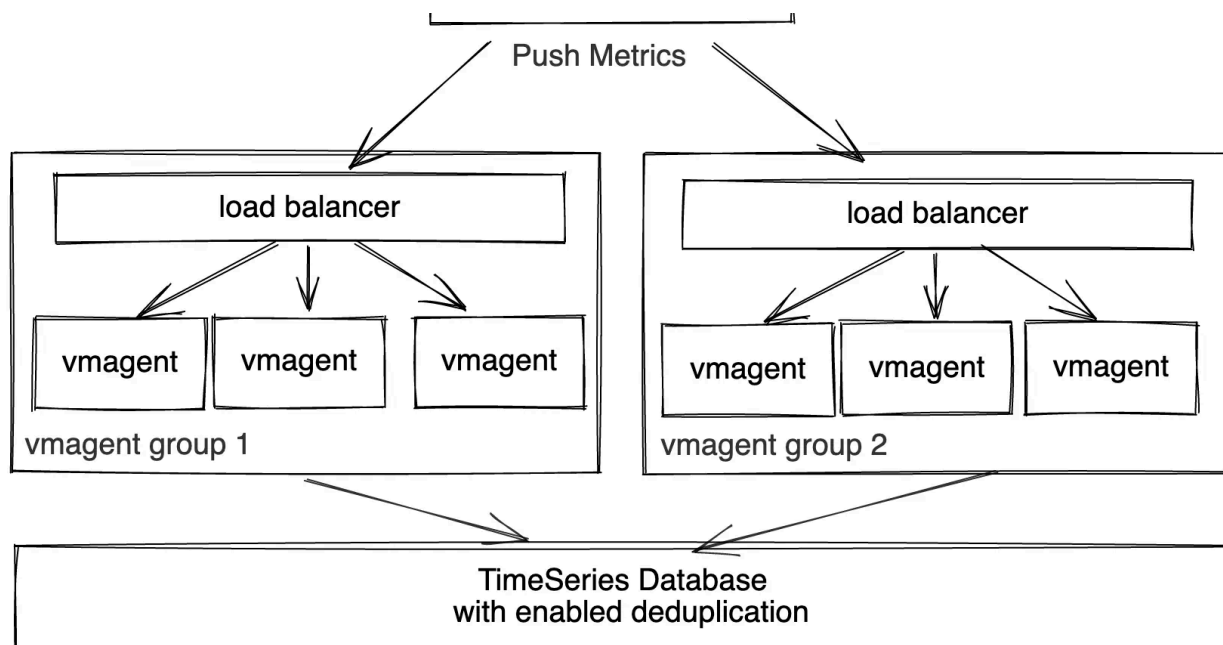
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vmagent push model high availability

Multiple sources can push data simultaneously to two groups of identically configured [vmagents](#) via the following [supported push protocols](#):

- InfluxDB line protocol
- DataDog “submit metrics” API
- Graphite plaintext protocol
- OpenTSDB http and telnet protocols
- Arbitrary CSV
- JSON line protocol
- Prometheus remote write protocol
- Prometheus metrics exposition format

The groups must be located in distinct availability zones for high availability purposes. E.g. when a group in a single AZ becomes unavailable, the collected data continues flowing to the group in another AZ.

The load-balancer in front of vmagent groups serves the following purposes:

- Horizontal scalability. If existing vmagent nodes in the group reach their scalability limits, then just add new vmagent nodes in order to process

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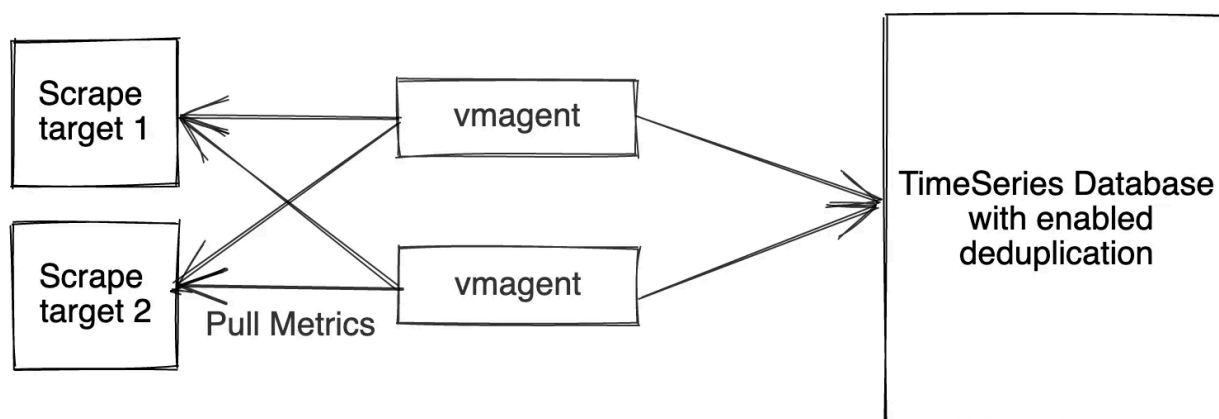
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The deduplication must be set up at VictoriaMetrics in order to remove duplicate samples received via two vmagent groups. See [how to deduplicate data in single-node VictoriaMetrics](#) and [how to deduplicate data in cluster version of VictoriaMetrics](#).

Pull and High Availability for small-to-medium loads



vmagent pull model high availability for small-to-medium loads

Two identically configured vmagent instances scrape the same targets and send the collected metrics to VictoriaMetrics (either [single-node](#) or [cluster version](#) may be used for storing the data). If a single vmagent instance is temporarily unavailable, then the remaining vmagent continues scraping the metrics. This prevents from gaps in the collected data at VictoriaMetrics.

The deduplication must be set up at VictoriaMetrics in order to remove duplicate samples received via two vmagent instances. See [how to deduplicate data in single-node VictoriaMetrics](#) and [how to deduplicate data in cluster version of VictoriaMetrics](#).

Pull and High Availability for high loads

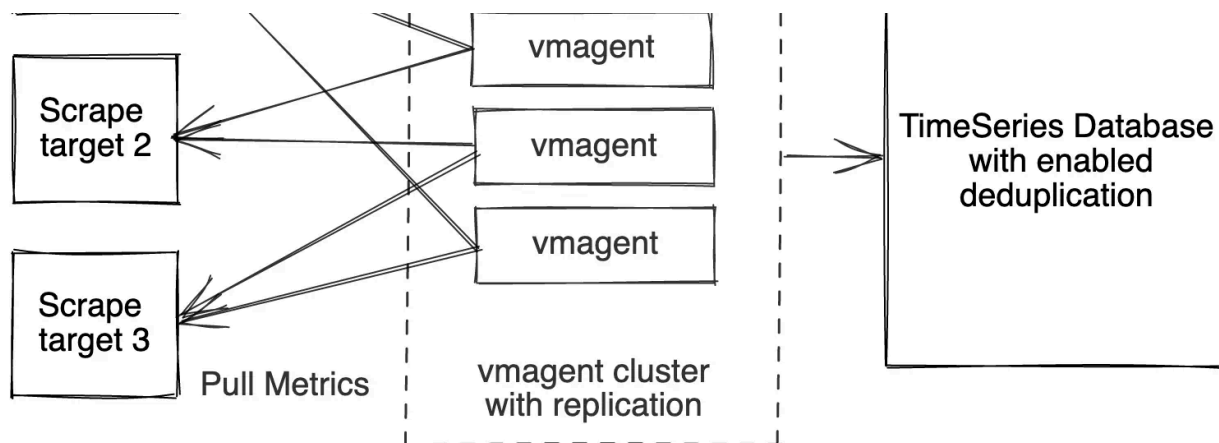
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vmagent pull model high availability for high loads

If a single vmagent has no enough resources for scraping the needed targets, then it is possible to spread scrape targets among a group of vmagent instances. This can be achieved with the following command-line flags:

- `-promscrape.cluster.membersCount` - the number of members in the group of vmagent instances
- `-promscrape.cluster.memberNum` - unique index of vmagent instance in the group
- `-promscrape.cluster.replicationFactor` - the number of vmagent instances in the cluster, which scrape every configured target

Every vmagent instance in the group must have identical `-promscrape.config` files and identical command-line flags except of `-promscrape.cluster.memberNum` flag. Every vmagent instance must have unique value for the `-promscrape.cluster.memberNum` flag in the range `[0 .. promscrape.cluster.membersCount-1]`. In this setup every vmagent instance scrapes `promscrape.cluster.replicationFactor / promscrape.cluster.membersCount` part of all the scrape targets defined at `-promscrape.config` (including dynamically discovered scrape targets).

If `-promscrape.cluster.replicationFactor` is set to a value greater

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 vmagent, open source, database, monitoring, high-availability

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