

1 A Community-Driven Differential Privacy Deployment Registry

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7 **Overview**

8 In 2019, Cynthia Dwork, Nitin Kohli, and Deirdre Mulligan wrote “*Differential Privacy in Practice: Expose your*
9 *Epsilons!*” [1], which argues that details about deployments of differential privacy should be collaboratively
10 collected into a public resource database, which they titled “the Epsilon Registry.” From this, practitioners
11 could share the choices they made for implementation—in particular, the authors were interested in fos-
12 tering common knowledge about the level of the privacy-loss parameter, epsilon, used in different settings.
13 They wrote:

14 *“...there is a need for shared learning amongst the differential privacy community. To serve*
15 *these purposes, we propose the creation of the Epsilon Registry—a publicly available commu-*
16 *nal body of knowledge about differential privacy implementations that can be used by various*
17 *stakeholders to drive the identification and adoption of judicious differentially private implemen-*
18 *tations.”*

19 Since then, industry blogs and shared spreadsheets have begun collecting data from publicly available sources
20 and shared notes, notably the blog by Desfontaines [2]. These limited data points are becoming de facto
21 benchmarks against which engineers are designing differentially private systems.

22 There is a growing need to realize the original goal of “Expose your Epsilons!”, both to practitioners in making
23 reasonable choices, and to foster and accelerate industry norms for privacy. Bringing together deployment
24 data in a public and common format, with high-quality moderation will help speed industry consensus. A reg-
25 istry will facilitate the adoption of differential privacy by establishing usage norms and application-specific
26 guidance on parameter choices. A deployment registry will help legal and policy reviewers compare new
27 proposals against the broader landscape of industry implementations. The ability to compare with other
28 deployments may also motivate systems to increase their privacy protections. Additionally, the focal nature
29 of such a database may strengthen creators’ incentives for transparency in describing deployments – estab-
30 lishing a norm of openness. To reflect the broader scope envisioned here, we adopt the name Differential
31 Privacy Deployment Registry (DP Deployment Registry hereafter).

32 **Proposal**

33 In our full paper [3], we describe how NIST proposes to host the DP Deployment Registry through a Pub-
lic Working Group (PWG) and describe a proposed governance structure and code of conduct for contin-
ued contributions, development, and editorial oversight. We describe architectures for data dissemination,
preservation, documentation, and long-term access.

34 The proposal also describes the implementation of the DP Deployment Registry that several of us helped
35 build. ¹ Specifically, in spring 2024, a team at the privacy start-up Oblivious (Berrios, Usynin, Fitzsimons [4])
36 began work on such a prototype, which would be further developed in collaboration with OpenDP, the
37 open-source software project led by a team at Harvard University. Research by several of us at OpenDP
38 (Nanayakkara, Ghazi, and Vadhan [5]) then developed a richer schema to describe any given differential pri-
39 vacy deployment (based on existing literature that aims to synthesize DP concepts [1, 6–9]) and developed
40 a prototype user interface to facilitate easy exploration of registry entries. Each entry (i.e., deployment) is
41 presented as a “differential privacy deployment card,” inspired by “model cards” for documenting machine
42 learning models [10]. A wider team at Oblivious and OpenDP, including many of us, then incorporated many
43 of these ideas into the registry currently hosted by OpenDP,² which is currently populated with over 30 en-
44 tries. This registry contains materials to enable audiences of differing levels of differential privacy expertise
45 to interpret the content in the registry. We note that development of the schema and prototype interface
46 by Nanayakkara, Ghazi, and Vadhan [5] was concurrent to recent research by Dibia, Lu, Bhattacharjee, Near,
47 Feng [11] and Khavkin and Toch [12] which both systematize DP deployments and could further inform future
48 versions of the registry.

49 Our full paper [3] provides an overview of the proposals for the registry schema, contribution and editorial
50 processes, and the evidence basis for deployment entries. It also describes the aforementioned interface.

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