

FAMILYSEARCH.ORG CASE STUDY

Merlin Carpenter and Tim Stokes

FamilySearch

- World's largest genealogy organization
- In operation more than 100 years
- Non-profit
- Owned and funded by the Church of Jesus Christ of Latter-day Saints

FamilySearch Mission

To rediscover
and preserve a knowledge of
the family relationships of all humankind

Record Preservation

- Granite Mountain Records Vault
 - granite walls 200 meters thick
 - climate controlled interior



The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to delete the image and then insert it again.

Record Preservation

- Granite Mountain Records Vault
 - 2+ million rolls of microfilm
 - 3.6 billion images
 - records from 100+ countries (e.g. Denmark: 97,068 rolls)



- Census

[illegible]

Record Preservation

- Census
- Vital (Birth, Marriage, Death)

66

REGISTER

Line Numbered.	DATE OF BIRTH.	NAME OF CHILD IF NAMED.	WHITE.	COLORED.		SEX.		BORN.		PLACE OF BIRTH.	Father's Name in full if Child be free and born in wedlock; or Name of Owner if Child be born a Slave.
				Male.	Female.	Male.	Female.	Male.	Female.		
1	9-14-1879	Edw. Esther M. Mety	/			/				Cashaw county	William J. Mety
2	1879	✓ Charles Francis	/			/		/		Cathoun County	Collins Betts
3	"	✓ Peter L. L.	/			/		/		"	Henry Bell
4	"	✓ Not named	/			/		/		"	Emery Ball
5	Nov 2-79	✓ William Alfred Dyer	/			/		/		"	Wm. J. Bell
6	"	✓ "	/			/		/		"	Hugh P. Collett
7	"	✓ "	/			/		/		"	John Freshour

Record Preservation

- Census
- Vital (Birth, Marriage, Death)
- Civil and Church
- Military
- Migration
- Probate, Tax, Land
- Wills and Obituaries

Image Capture/Digital Conversion

- 200+ camera operators
- in 40+ countries
- 280 million new images this year

Online Indexing

- 100,000 volunteers
- 300 million new names this year

FAMILYSEARCH
INDEXING

INDEXING NEWS PROJECTS HELP Sign In Register

Languages: English

2026

STATE OF DELAWARE
BUREAU OF VITAL STATISTICS
CERTIFICATE OF BIRTH

1 PLACE OF BIRTH
County of New Castle
Hundred of _____
Village of _____
City of Wilmington (No. 809 Street 3 Ward)

2 FULL NAME OF CHILD Frank Pierce Longhead (If child is not yet named, make supplemental report, as directed.)

3 SEX OF CHILD M 4 Twin, Triplet, or other no 5 Color or Race white 6 Legitimate yes 7 DATE OF BIRTH Feb 5 1919 11:20 A. M.

ALTERED 8-8-46

"Substantiated in age"

Registered No. 1049

Field Name	Field Value	Answers	Field Help
Image Type	Normal		Image Type <ul style="list-style-type: none">• Select Normal if the document appears to be a normal birth certificate.• Select Blank if there is no data on the document.• Select Unreadable if you cannot read any of the data on the document.
State of Birth			
County of Birth			
City or Town of Birth			
Child's Given Names			
Child's Surname			
Gender			
Color or Race			
Month of Birth			
Day of Birth			
Year of Birth			

Done

Online Access

- 600 million browsable images
- 3 billion searchable names (30 billion in vault)

Discover Your Family History

Records Trees Catalog Books

First Names

Last Name

Place

From Year

To Year

Search

Advanced search

Browse by Location

Africa

Asia and Middle East

Australia and New Zealand

Caribbean, Central and South America

Europe

Pacific Islands

USA, Canada, and Mexico



Changes at FamilySearch.org

What's New?



Changes to FamilySearch.org make it easier to search family history

Go to previous site

Free U.S. Civil War Records



Records, regiment histories, timeline, historical figures, and more.

Refine your search ▼

Historical Records

1–20 of 4,717 results for >Name: **carl heinrich bloch**

Filter your results by:

[Learn more](#)

Collections ▶

Birthplace ▶

Birth Year ▶

Marriage Place ▶

Marriage Year ▶

Residence Place ▶

Residence Year ▶

Death Place ▶

Death Year ▶

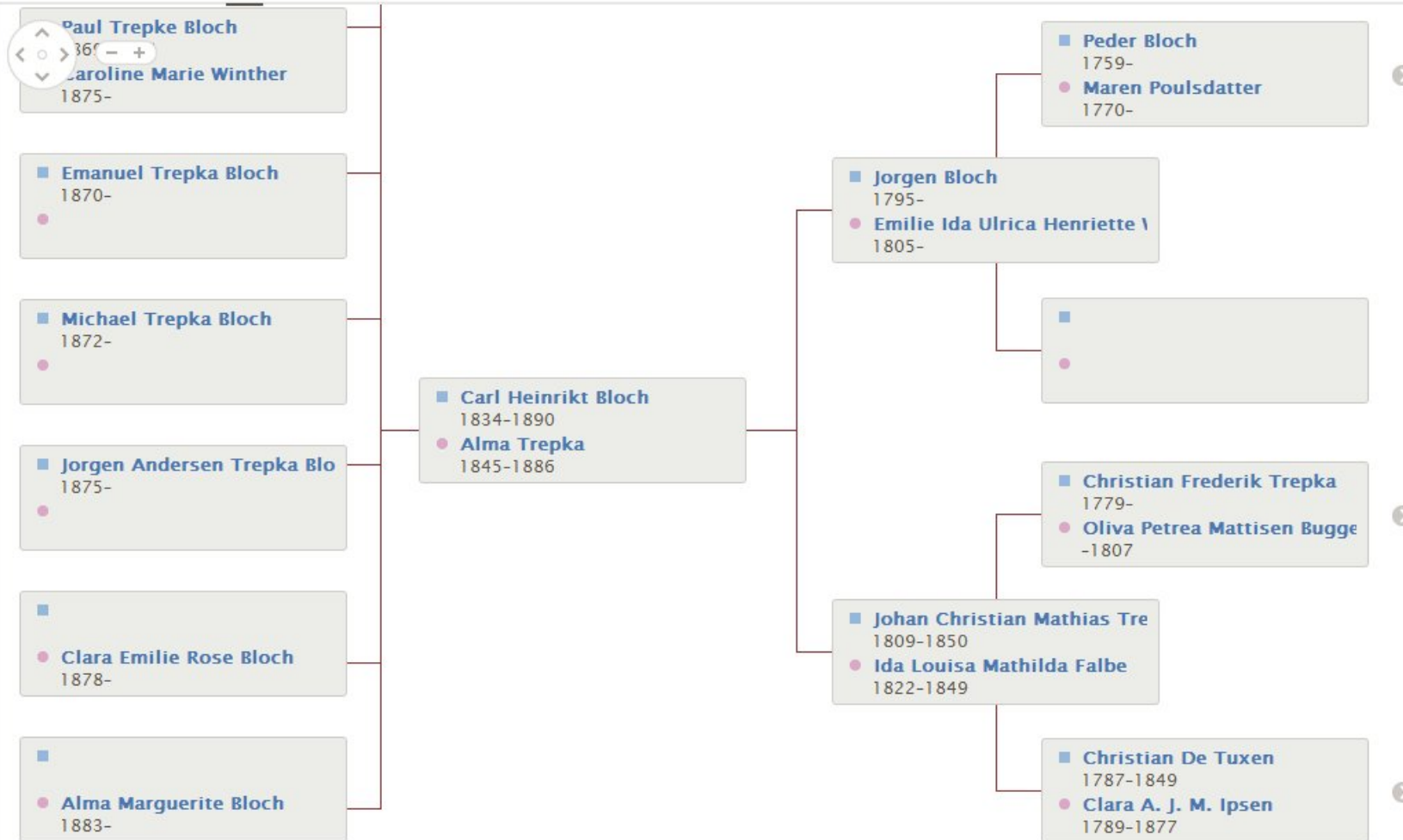
Other Place ▶

Other Year ▶

Gender ▶

Try adding more search terms to improve your search results.

Carl Heinrich Bloch Germany Births and Baptisms, 1558–1898	birth: 25 Jun 1862 Frankfurt (Main), Hessen-Nassau, Preußen, Germany residence: 1862 Frankfurt (Main), Hessen-Nassau, Preußen, Germany	parents: Conrad Bloch, Christina Magdalena Muehe ▼
Carl Heinrich Bloch Denmark Baptisms, 1618–1923		spouse: Alma Trepka child: Emanuel Trepka Bloch ▼
Carl Heinrich Bloch Denmark Baptisms, 1618–1923		spouse: Alma Trepka child: Jorgen Andersen Trepka Bloch ▼
Carl Heinrich Bloch Denmark Baptisms, 1618–1923		spouse: Alma Trepka child: Michael Trepka Bloch ▼
Carl Heinrich Bloech Germany Births and Baptisms, 1558–1898	birth: 20 Sep 1846 residence: 1846 Danzig, Westpreußen, Preußen, Germany	parents: Carl Gottlieb Bloech, Emilie Auguste Kattenberg ▼
Carl Heinrich Ernst Beloch Germany Deaths and Burials, 1582–1958	death: 19 Aug 1868 Berlin, Brandenburg, Preußen, Germany	parents: Carl Heinrich Beloch ▼
Carl Heinrich Beloch Germany Births and Baptisms, 1558–1898		spouse: Louise Wilhelmine Caroline Petroschke child: Anna Marie Rosalie Beloch ▼
Carl Heinrich Beloch Germany Births and Baptisms, 1558–1898		spouse: Louise Wilhelmine Caroline Petroschke child: Erdmann Gottlieb Heinrich Beloch ▼



Refine your search ▼

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Death Place ▶

Death Year ▶

Other Place ▶

Other Year ▶

Gender ▶

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Denmark Baptisms, 1618-1923 for Carl Heinrich Bloch

[« Back to search results](#)



Image is not available for this
record on FamilySearch.

 [Search collection](#)

 [About this collection](#)

name: Emanuel Trepka Bloch  [Family Tree](#)
 gender: Male
 baptism/christening date: 26 Mar 1873
 baptism/christening place: HELLIGAANDS KIRKE, KOBENHAVN, KOBENHAVN, DENMARK
 birth date:
 birthplace:
 death date:
 name note:
 race:
 father's name: **Carl Heinrich Bloch**
 father's birthplace:
 father's age:
 mother's name: Alma Trepka
 mother's birthplace:
 mother's age:
 indexing project (batch) number: C20202-2
 system origin: Denmark-ODM
 source film number: 300491
 reference number:

Nr.	Aar og Datum.	Barnets fulde Navn.	Daabens Datum enten i Kirken eller Hjemme.	Førelæres Navn, Stand, Paandring og Bopæl.	Føddernes Navn, Stand og Opholdssted.	For anført i det almt. Bønf. Reg.	Anmærkninger.
	16 ^{te} April 73	Carl Christian Sofus Hansen (uapt)	2 ^{de} Juni Hansen	Ugift, Julian Sørensen og u. H. Søren Sørensen senior Carl Han- sen			Konge Mo. for Skap- skolen af 1873 op- hæft. Moders lig, Firmaaendringen for sin Fødselsdag i Grønnevej 14
75.	7 ^{de} Febr. 73	Folger Julius- Jørgensen	2 ^{de} - - -	Skrædder Hans Jørgensen og Kjæster, Caroline Sofie, f. Rasmussen Kroghstræde 11	Førelærene og Hfr Christen Larsen		
76.	29 ^{de} Januar 73	Michael Trepka Bloch, Sørensen Trepka Bloch (Født i Tyskland, hængslet i 1873)	24 ^{de} - - - Kjøbstadens Høstingsvej 14	Kjøbstadens Carl Kjærholm Bloch og Kjærholm Anna, f. S. Trepka H. Strand 52	Hfr H. Bloch, Fødderne Søren og Emilie Bloch, Moders, Grosserer H. Bloch, Inspektør S. Bloch, Landjurist O. Bloch og Land. med. O. Bloch		
77.	6 ^{te} April 73	Carl Christian Ludvigsen	8 ^{de} - - -	Arbejder Christian Ludvigsen og Kjæster, Else Sofie Pedersen Kjøbstadens 12	Moders og Hfr Søren Larsen		
78.	2 ^{de} Mai 73	Charles Peter Hansen	8 ^{de} - - -	Kjøbstadens Hans Hansen og Kjæster Julie Marie, f. Søren Kjøbstadens 17	Førelærene: Førelærene: Arbejdsmand Hans Hansen og Kjæster Christiane Pedersen Kjøbstadens 10.		Barnets Fødselsdag p. 2 ^{de} Mai (1873) og Førelærene: Sørensen Kjøbstadens Fødderne Hansen i. i. i. (Kjøst. Høst. f. Sørensen) 14/73.
79.	15 ^{te} April 73.	Peter William Larsen	8 ^{de} - - -	Kjøbstadens Hans Larsen og Kjæster Kjøst. Niels Grønnevej 17	Førelærene og Hfr Sofie Hansen		
(80)	7 ^{de} Juli 73 Fødderne	Louis Florian Valdemar Hockwitz	8 ^{de} - - -	Bogtrykkerens Georg Vilhelm Hockwitz og Kjæster Louise Emilie f. Sørensen Kjøbstadens 15	Førelærene		

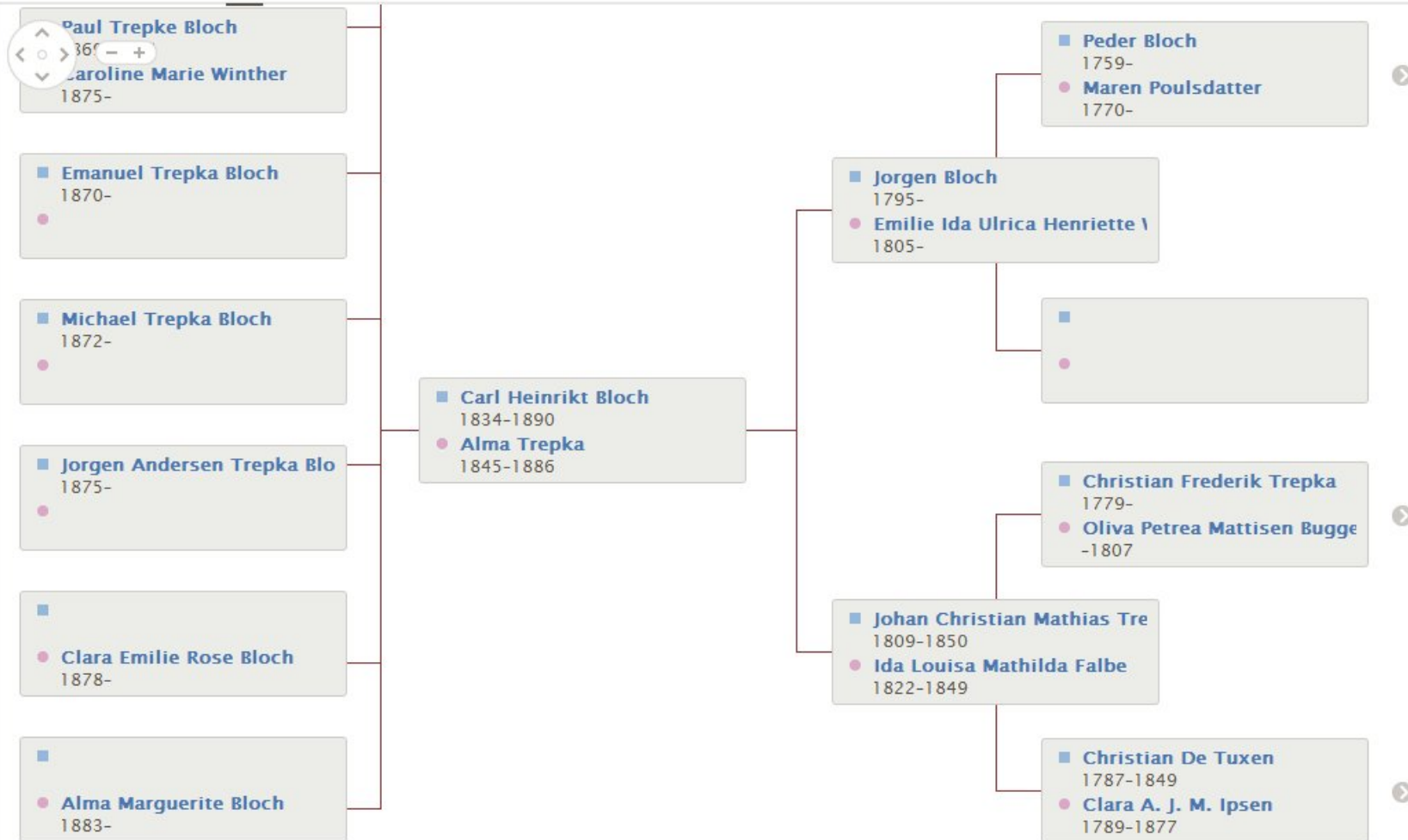
Nr.	Aar og Datum	Barnets fulde Navn.	Daabens Datum enten i Kirken eller Hjemme.	Forældrenes Navn, Stand, Haandtering og Bopæl.
76.	29. ^e Januar 73	Michael Trepka Bloch Manuel Trepka Bloch (Twillingen, hjemme- roble af 26/3 73)	24 ^{de} — — — fjernstillede Holmens Kirke	Kunstmaaler Carl Heinrich Bloch, Hustru Alma, f. 55 Trepka Gl Strand 52

Citation

- Holy Spirit Parish (Copenhagen, Denmark), “Helligaands Kirkes Daabsprotokol, 1872-1880,” p. 27, entry 76, Michael Trepka Bloch and twin Emanuel Trepka Bloch, 29 January 1873, Provincial Archives of Zealand, Copenhagen.

Citation for Online Resource

- “Denmark Baptisms, 1618-1923,” database, *FamilySearch* (<https://familysearch.org/pal:/MM9.1.2/9CB7-PX3/p2> : accessed 27 September 2011), Emanuel Trepka Bloch, 1873; **from** Holy Spirit Parish (Copenhagen, Denmark), “Helligaands Kirkes Daabsprotokol, 1872-1880,” p. 27, entry 76, Michael Trepka Bloch and twin Emanuel Trepka Bloch, 29 January 1873, Provincial Archives of Zealand, Copenhagen; FHL microfilm 300,491.



Denmark Baptisms, 1618-1923 for Carl Heinrich Bloch

[« Back to search results](#)



Image is not available for this
record on FamilySearch.

 [Search collection](#)

 [About this collection](#)

name: Emanuel Trepka Bloch  [Family Tree](#)
 gender: Male
 baptism/christening date: 26 Mar 1873
 baptism/christening place: HELLIGAANDS KIRKE, KOBENHAVN, KOBENHAVN, DENMARK
 birth date:
 birthplace:
 death date:
 name note:
 race:
 father's name: **Carl Heinrich Bloch**
 father's birthplace:
 father's age:
 mother's name: Alma Trepka
 mother's birthplace:
 mother's age:
 indexing project (batch) number: C20202-2
 system origin: Denmark-ODM
 source film number: 300491
 reference number:

Link Rot



- The tendency for links on a website to gradually “break” over time.

Link Rot



- Nelson and Allen (2002) examined link rot in digital libraries found that about 3% of the objects were no longer accessible after one year.

Cool URIs don't change

- <http://www.w3.org/Provider/Style/URI>

“Cultural Memory” Organizations

- Libraries
- Government Agencies
- Universities
- Non-profit organizations
- Etc.

“Permanent Link” Solutions

- URN
- PURL
- Handle System
- DOI
- LSID
- ARK

Solving the “Link Rot” problem

- **Identifiers.** A way to assign identifiers that is independent of location.
- **Namespace.** A mechanism to subdivide the identifier namespace to avoid collision.
- **Resolver.** A mechanism to “resolve” an identifier to its current location.
- **Resolver Maintenance.** A way to keep the “resolver” up-to-date as resources change location.

Two Different Approaches

- Resolve every time
 - Store identifiers
 - When location is needed, ask resolver
- Resolve only when “broken”
 - Syntax embeds identifier in URI
 - Store URI with embedded identifier
 - Use URI until it “breaks”, then ask resolver for new URI (with embedded identifier) and store it.

URI with embedded identifier

- Ark example:

http://foobar.zaf.org/ark:/13030/654xz321/s3/f8.05v.tif				
_____/\		_/\	_/\	_/\
(replaceable)				Qualifier
	ARK Label			(NMA-supported)
Name Mapping Authority	(NMA)			Name (NMA-assigned)
				Name Assigning Authority Number (NAAN)

Resolve-when-broken Advantages

- Lower load on resolver
- Resolver is mostly removed from critical path

PAL

- Syntax:

`http[s]://<domain>[<path>]/pal:/<namespace>/<name>`

- E.g.

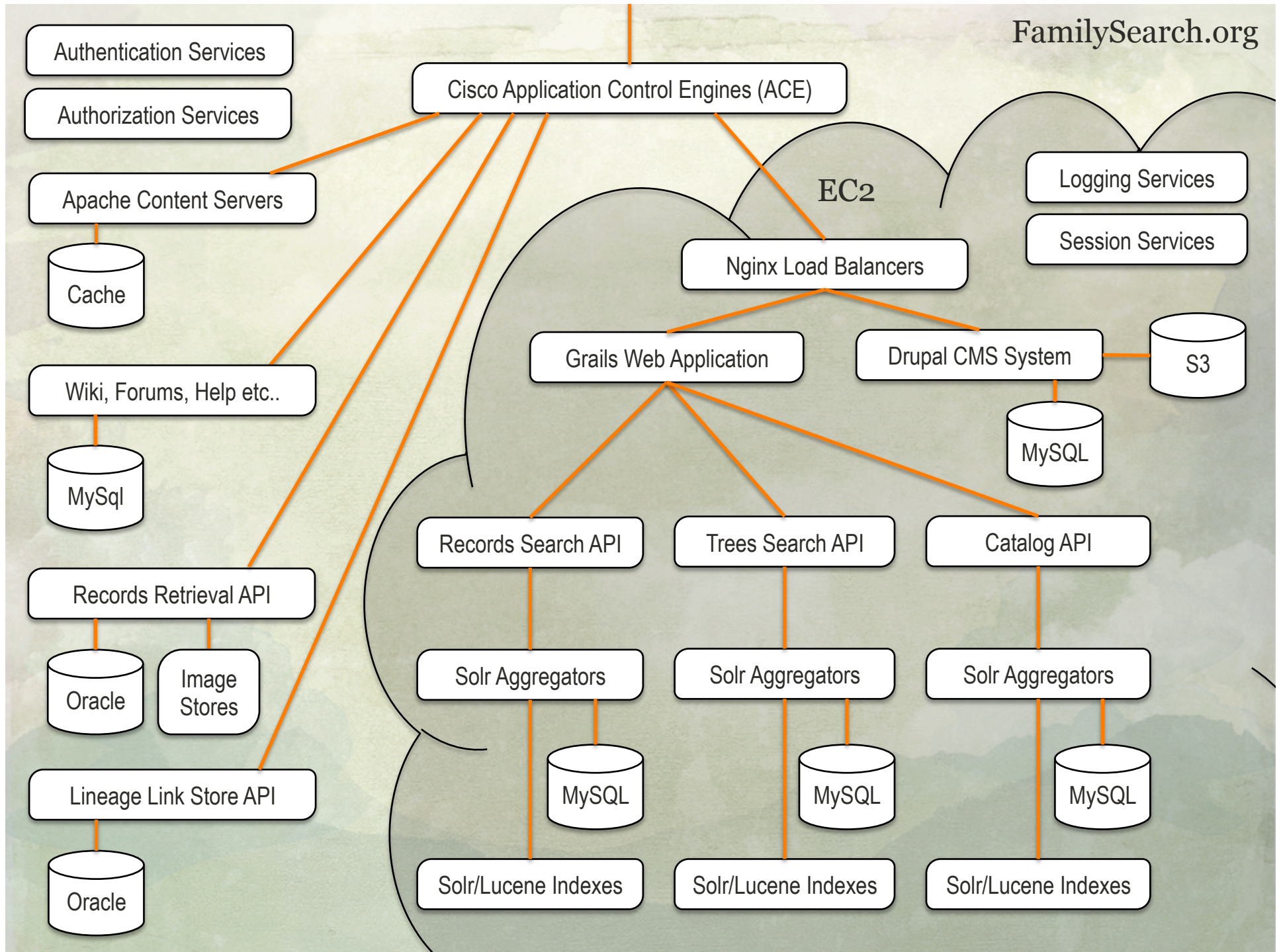
`https://familysearch.org/pal:/MM9.2.1/K86M-5H2`

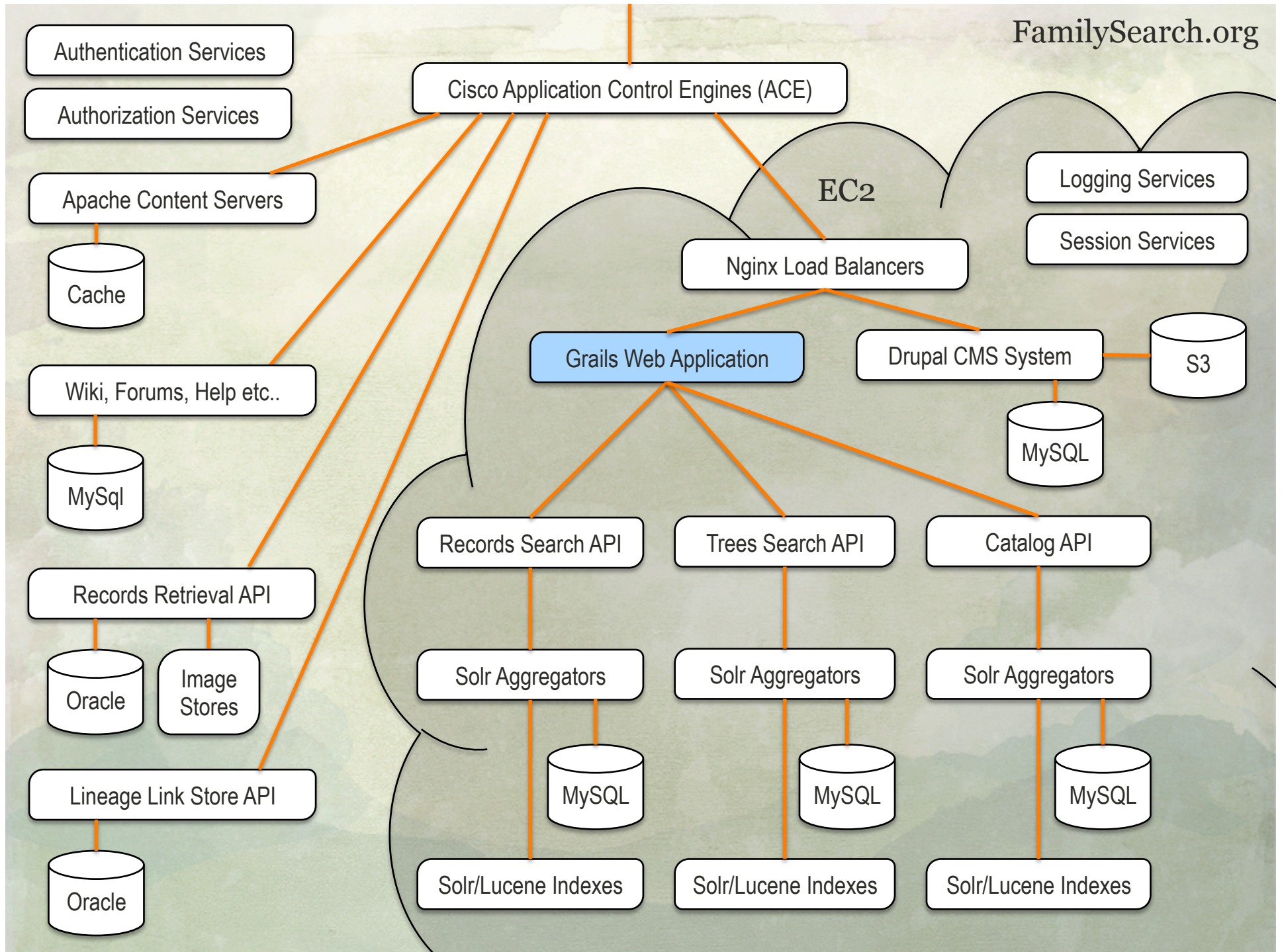
Related Links

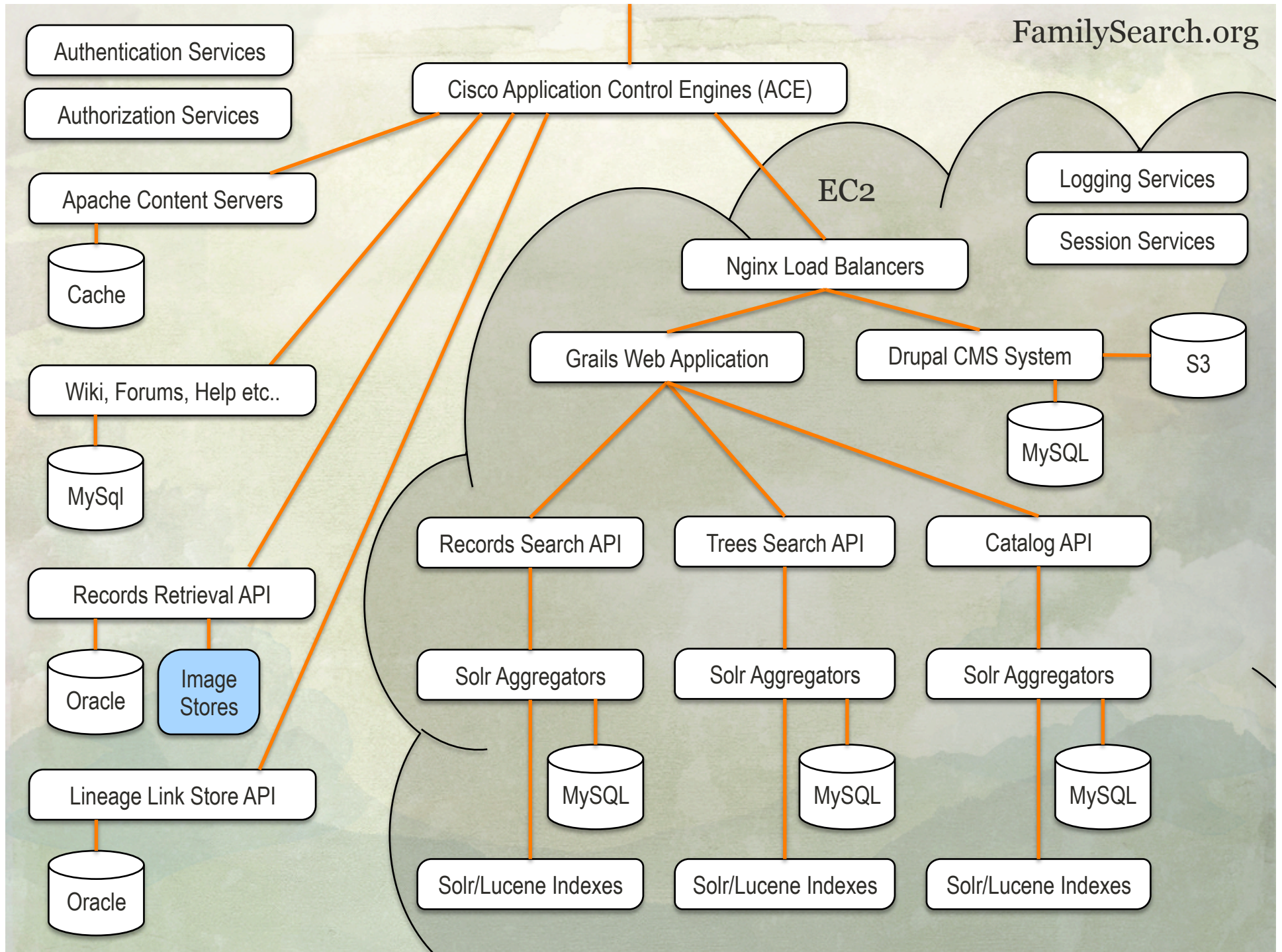
URN, Namespaces and Registries	http://www.w3.org/2001/tag/doc/URNsAndRegistries-50.html
The Handle System	http://www.handle.net/
DOI System	http://doi.org/
URN Specification	http://tools.ietf.org/html/rfc2141
LSID Specification	http://www.omg.org/docs/dtc/04-05-01.pdf
Ark Specification	http://www.cdlib.org/inside/diglib/ark/arkspec.pdf
Name to Thing Resolver	http://n2t.info/
DDDS Specification	http://tools.ietf.org/html/rfc3401
PURL home page	http://www.purl.org/
Cool URI's don't change	http://www.w3.org/Provider/Style/URI
Opacity Myths Debunked	http://rest.blueoxen.net/cgi-bin/wiki.pl?OpacityMythsDebunked

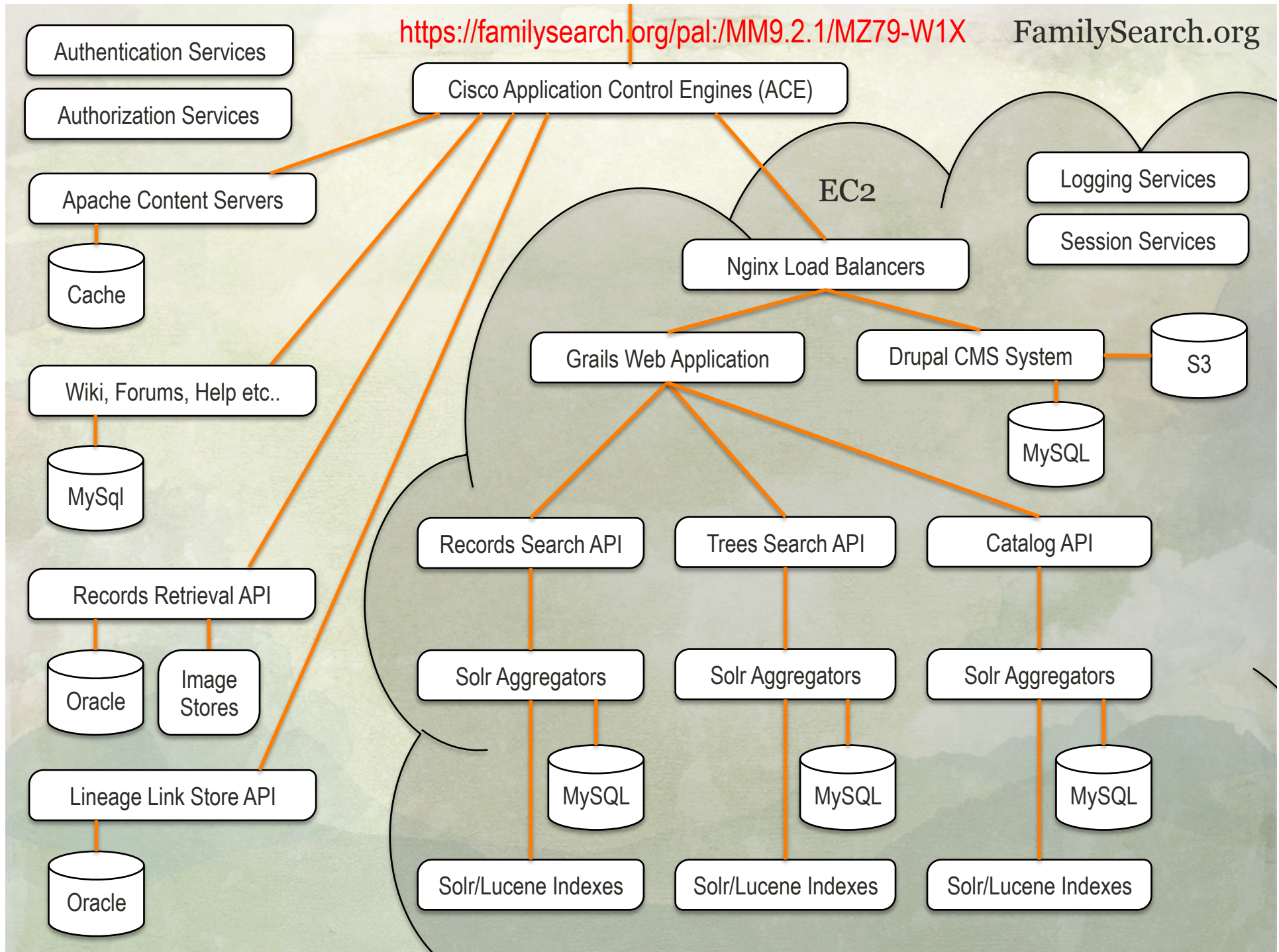
The background is a soft watercolor wash in shades of yellow, green, and blue. In the lower portion, there is a dark silhouette of a mountain range with a family of four (two adults and two children) standing on a hill, looking out over a valley. A single large tree stands on the right side of the hill. Centered in the upper half is a stylized tree logo with the word "FAMILYSEARCH" in a serif font, where the tree's trunk forms the letter 'Y'.

FAMILYSEARCH



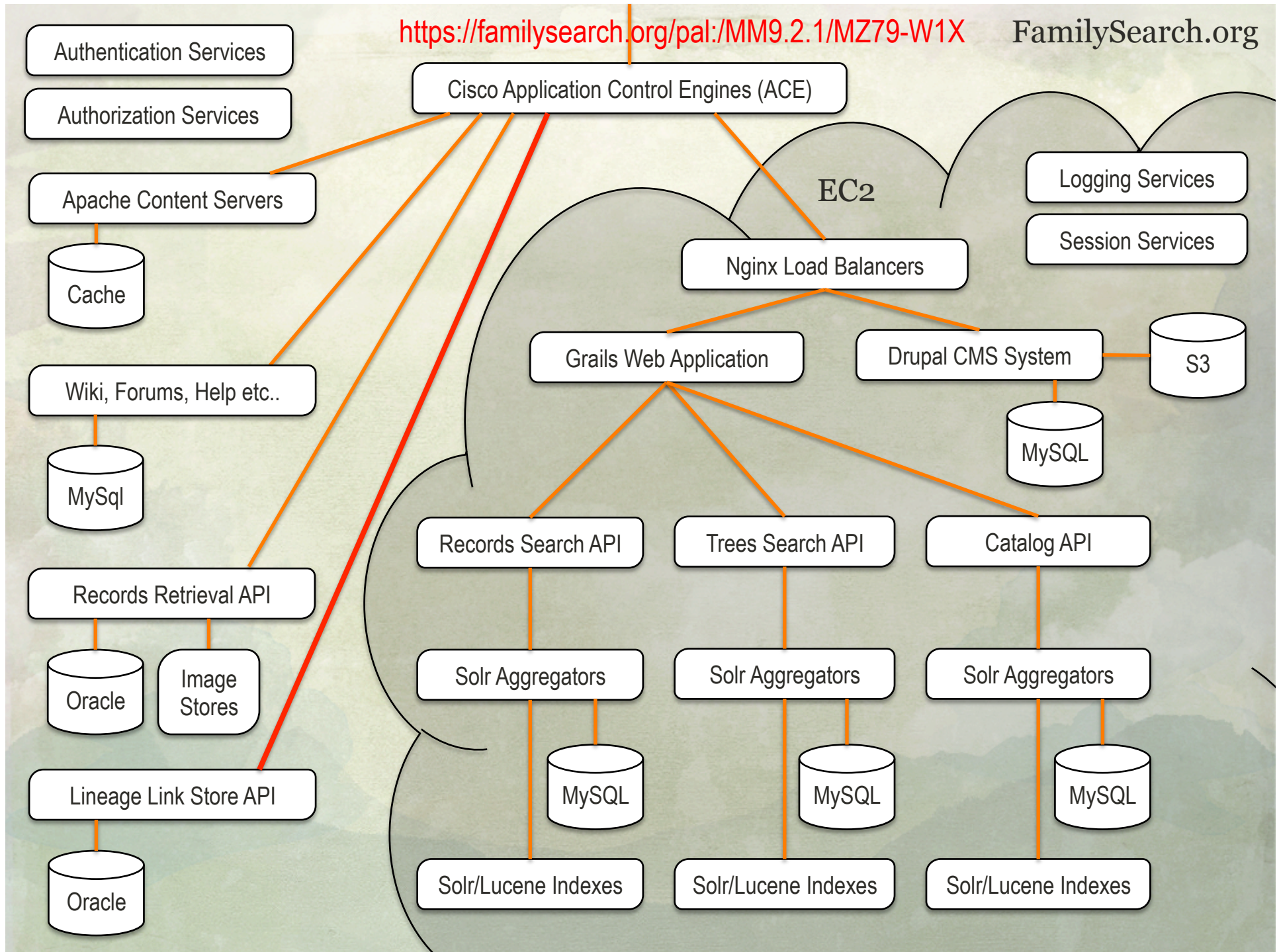






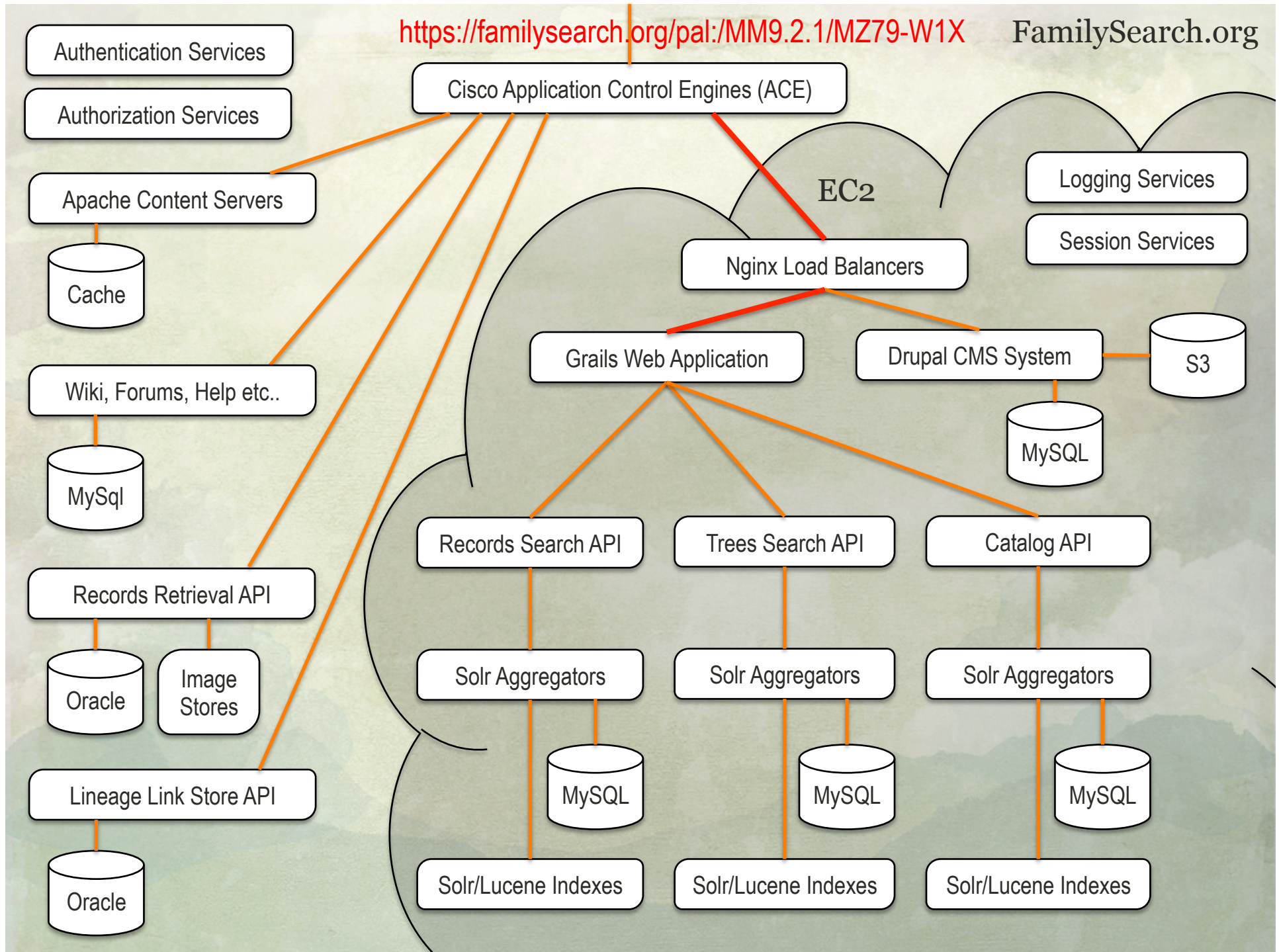
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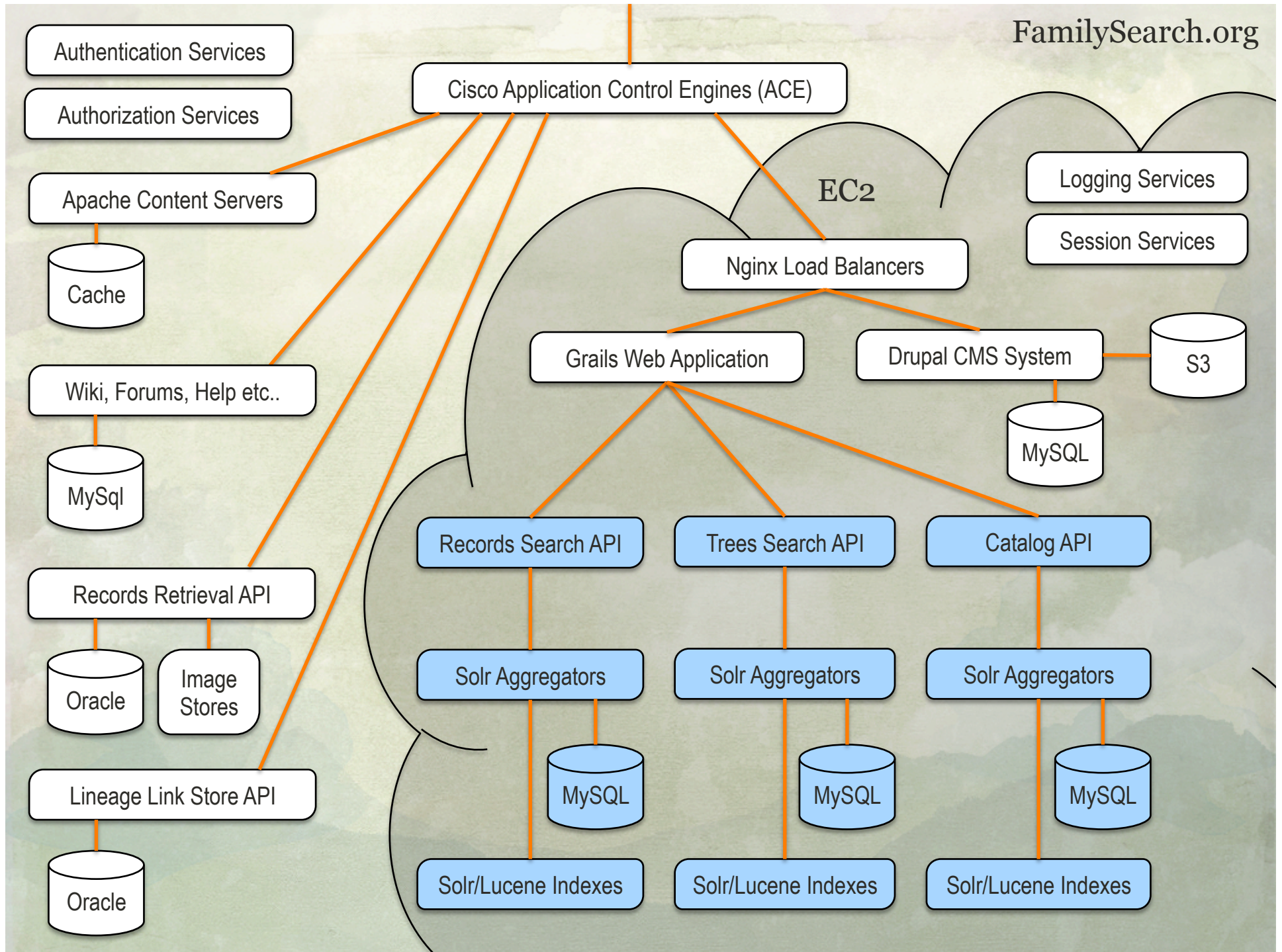
FamilySearch.org



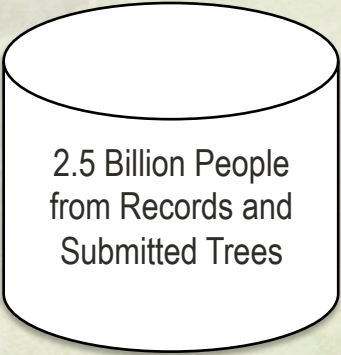
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FamilySearch.org



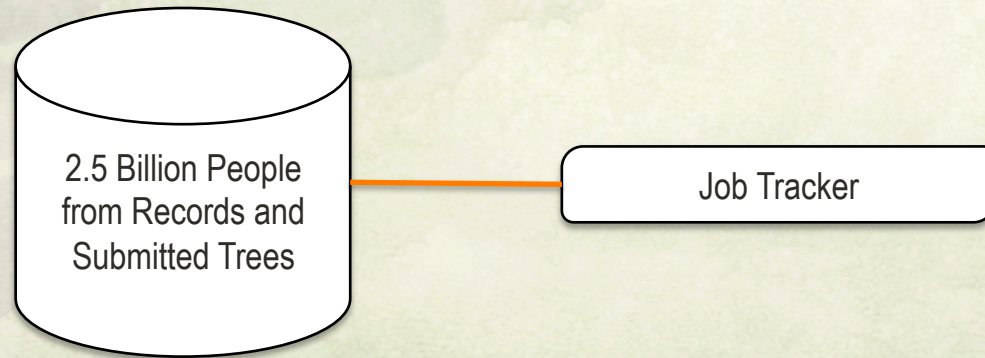


Map Reduce

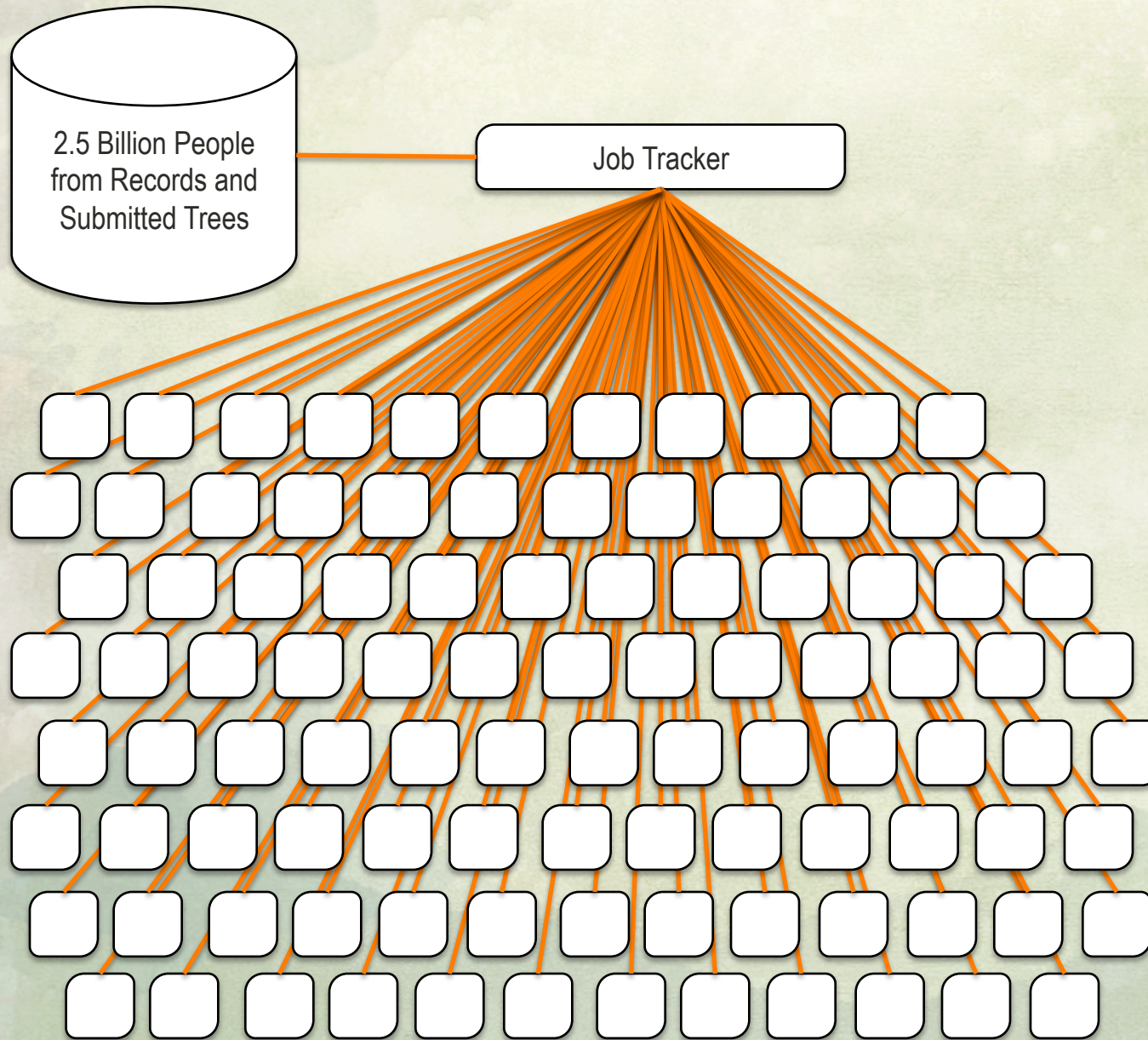


2.5 Billion People
from Records and
Submitted Trees

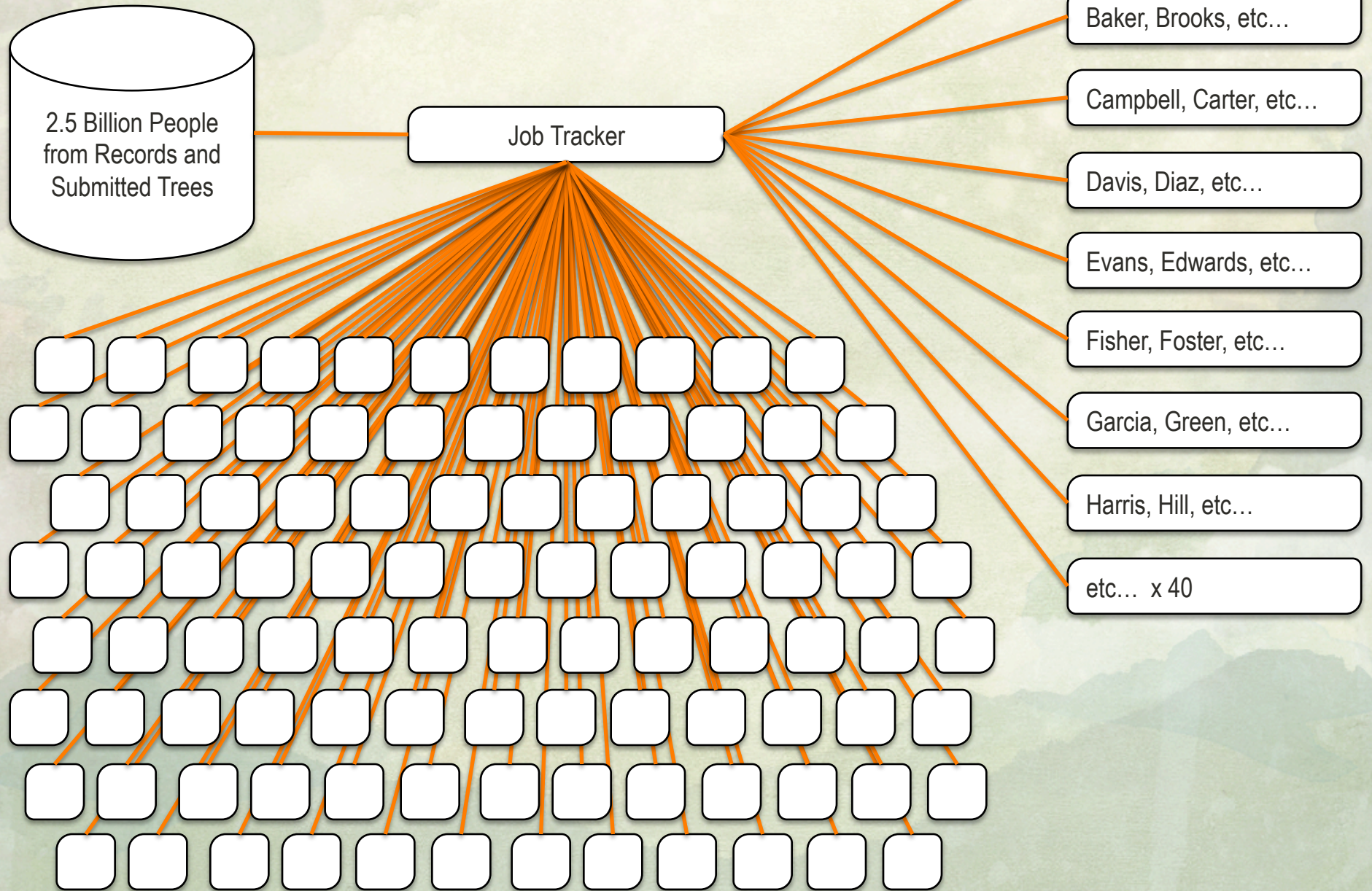
Map Reduce



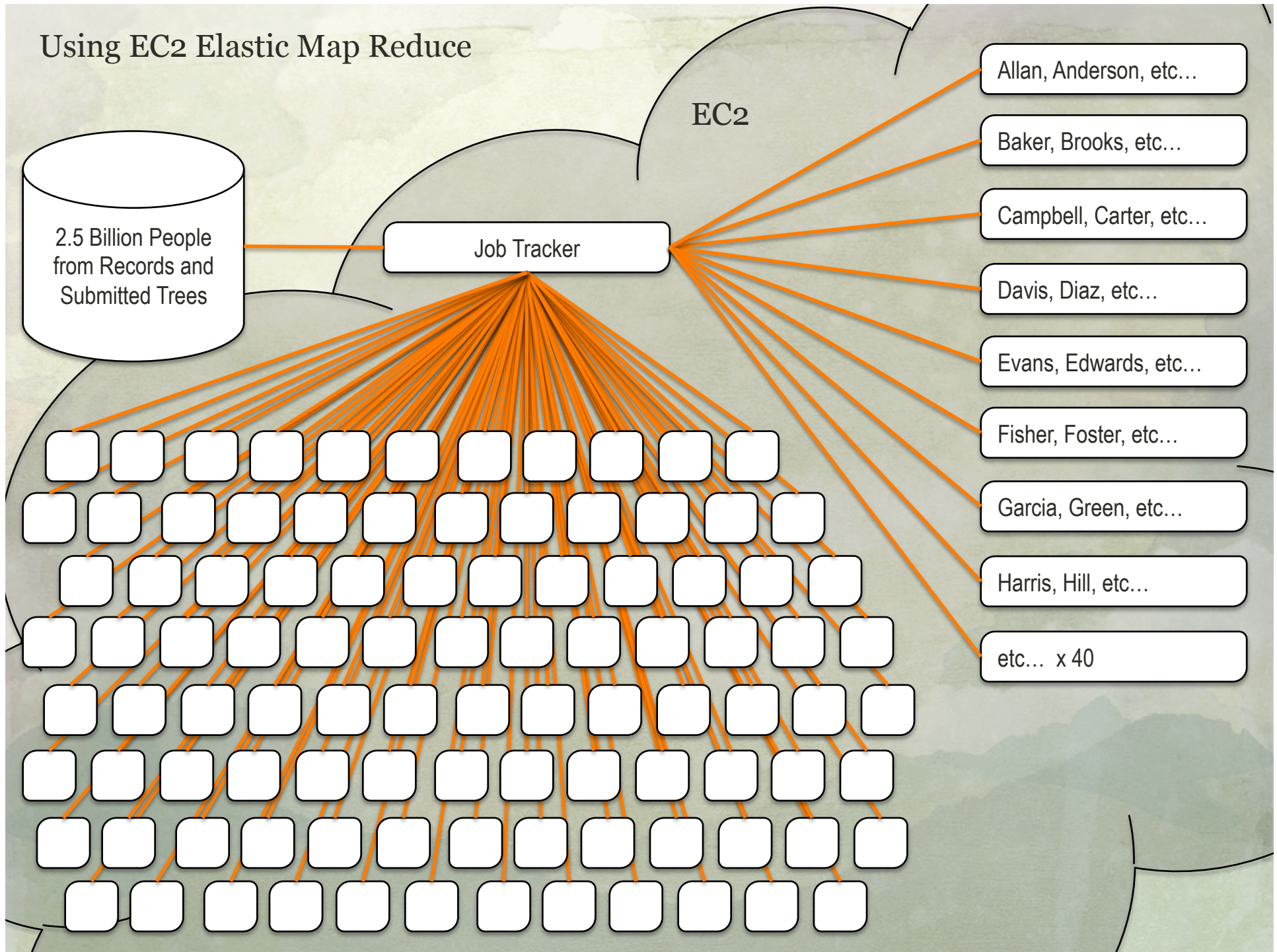
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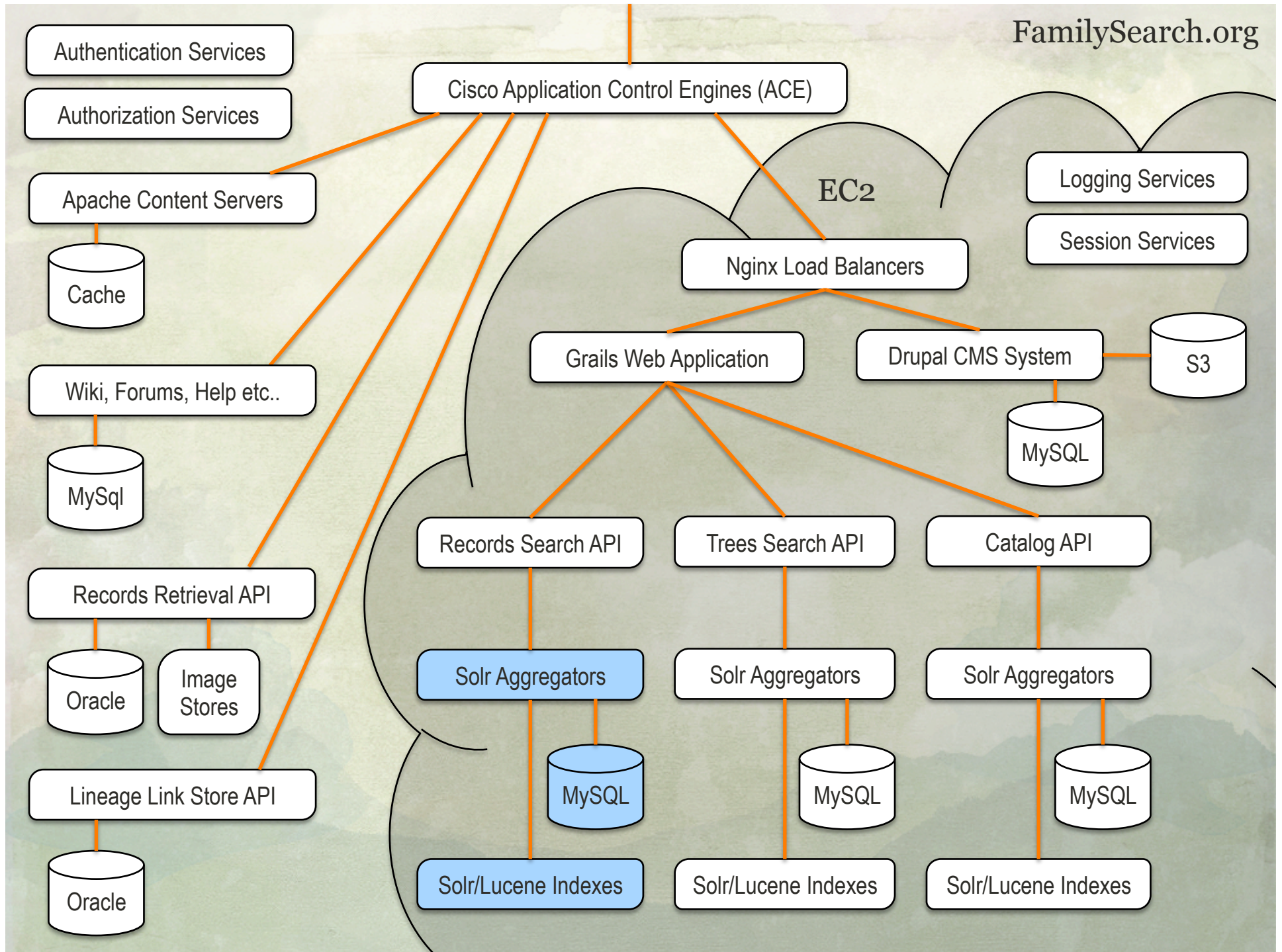


Map Reduce



Using EC2 Elastic Map Reduce





Historical Records Search

EC2

Load Balancer

Solr Aggregator

Solr Aggregator

Allan etc...

Baker etc...

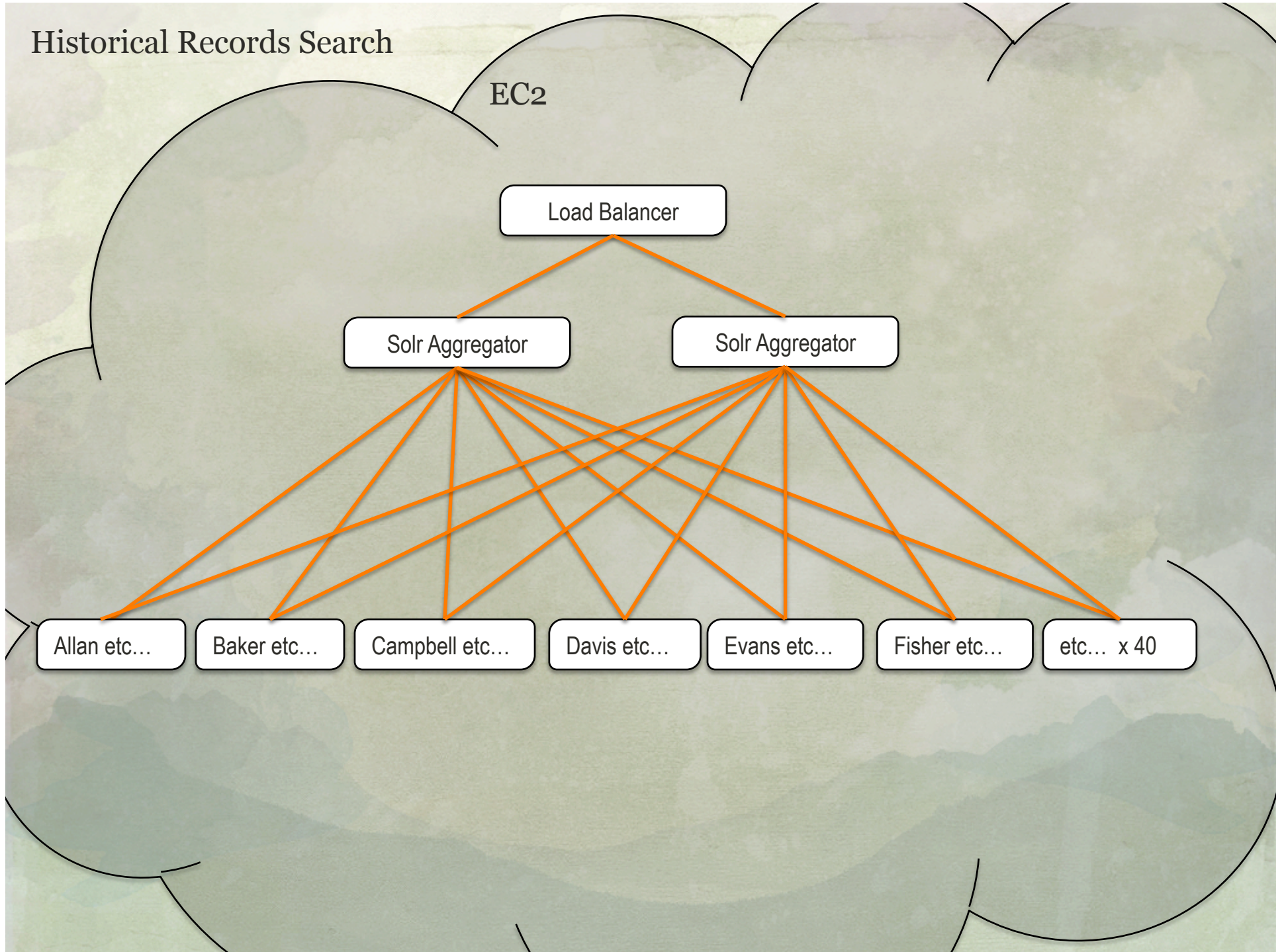
Campbell etc...

Davis etc...

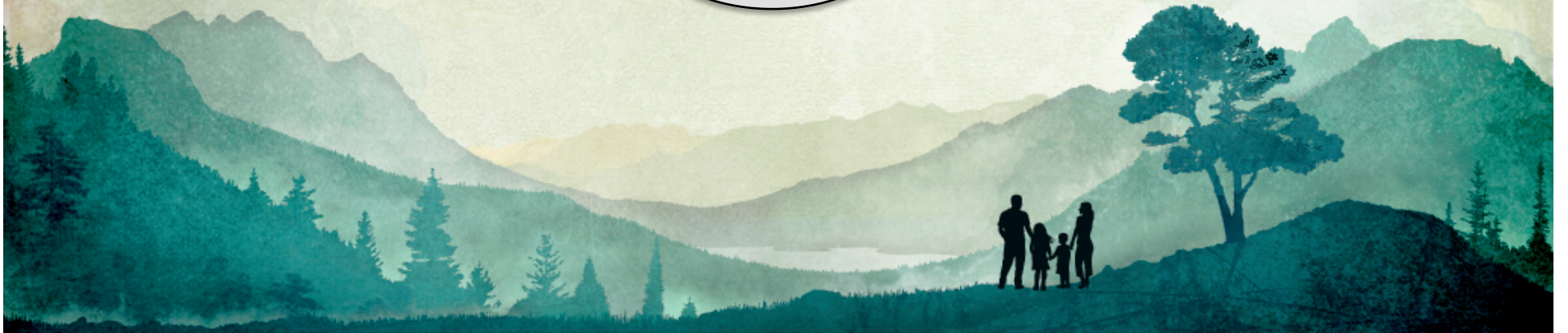
Evans etc...

Fisher etc...

etc... x 40



Cloud Computing



On Demand

ISSUES CREATE NEW ISSUE GREENHOPPE

Reference Build

Define and build out the CIS/CA

Created: 23/Sep/08 01:48 PM Updated: 16/Sep/09 12:32 PM D

Ref

Not

On Demand



Not my job



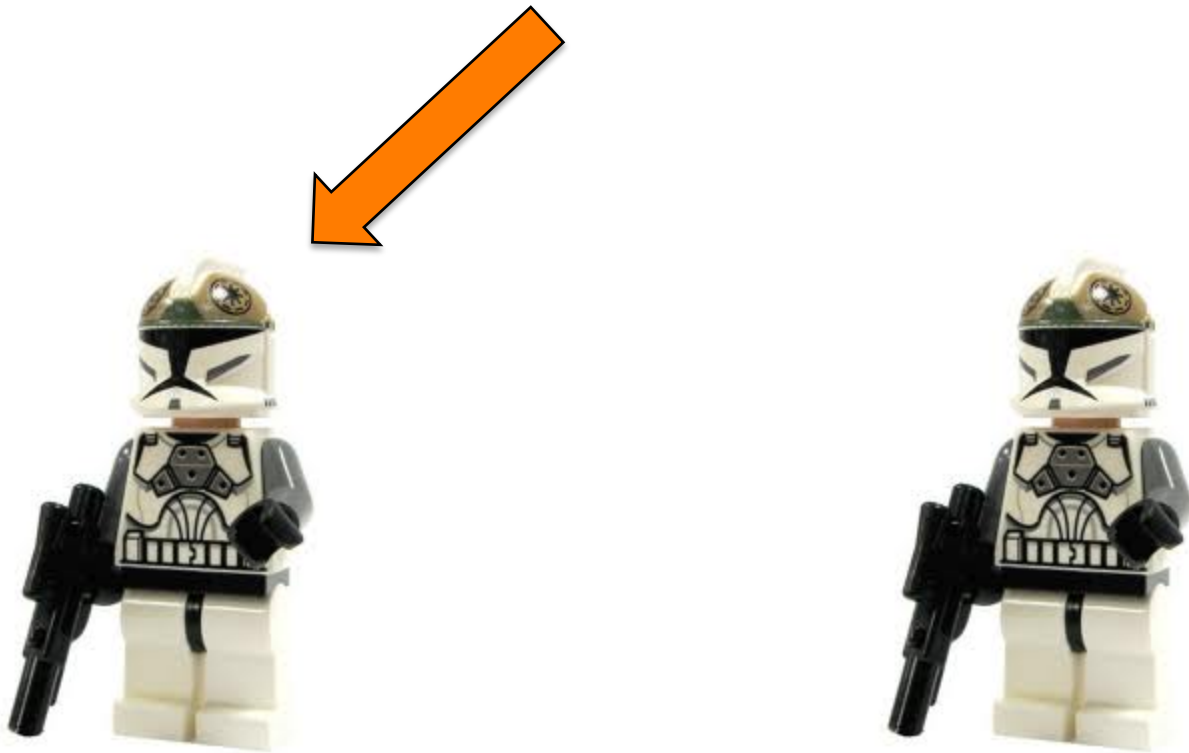


Lasic

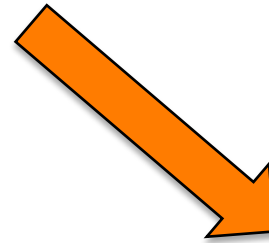
Active System



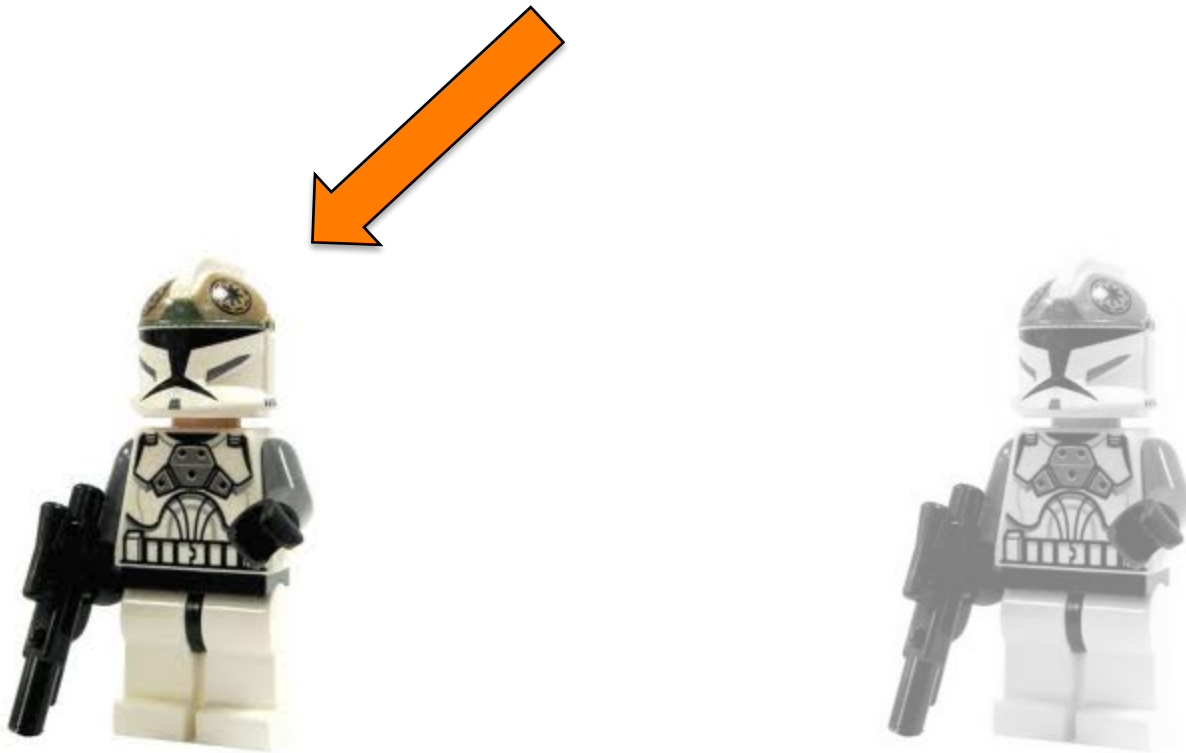
Clone



Deploy (Switch)



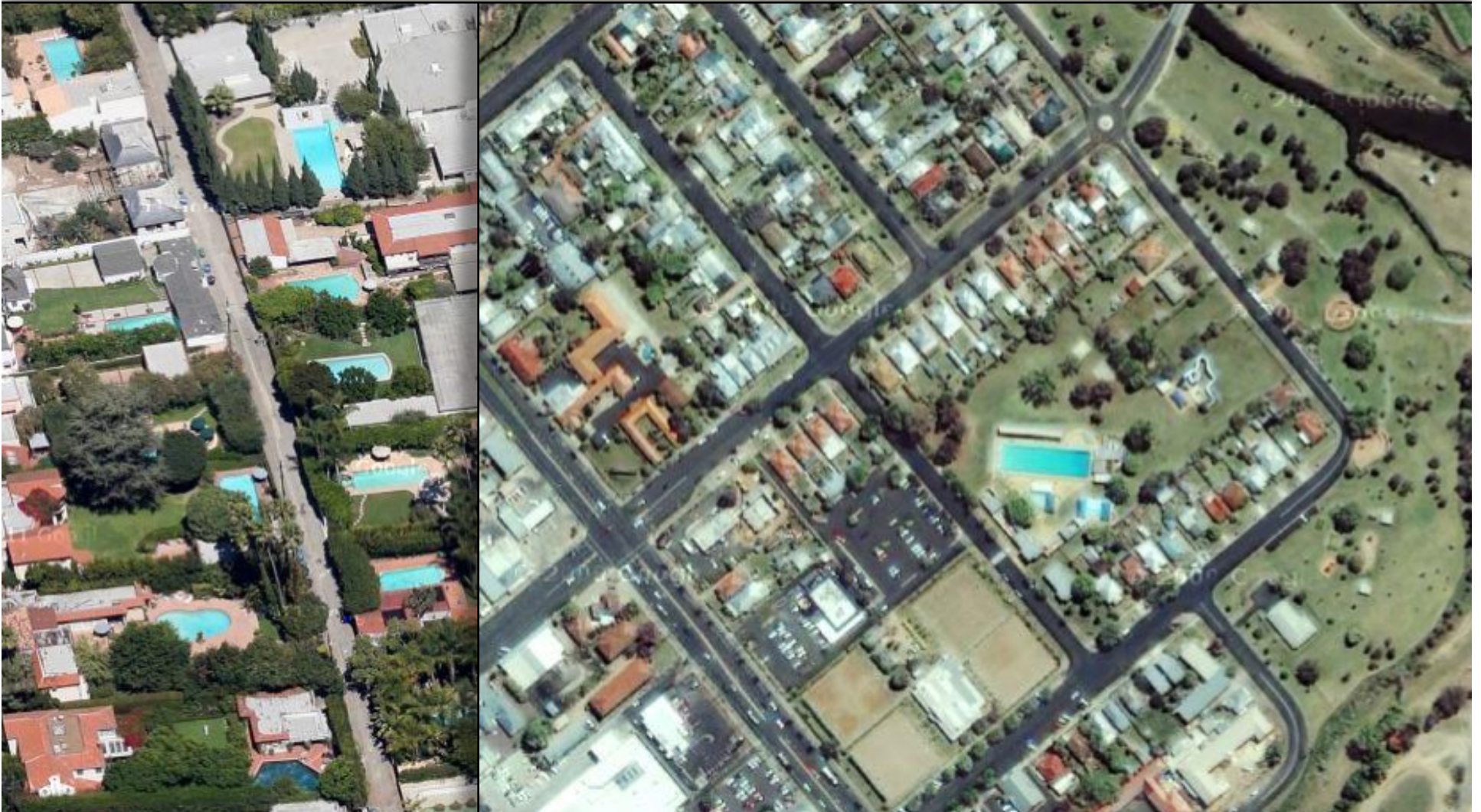
Deploy (and Rollback)



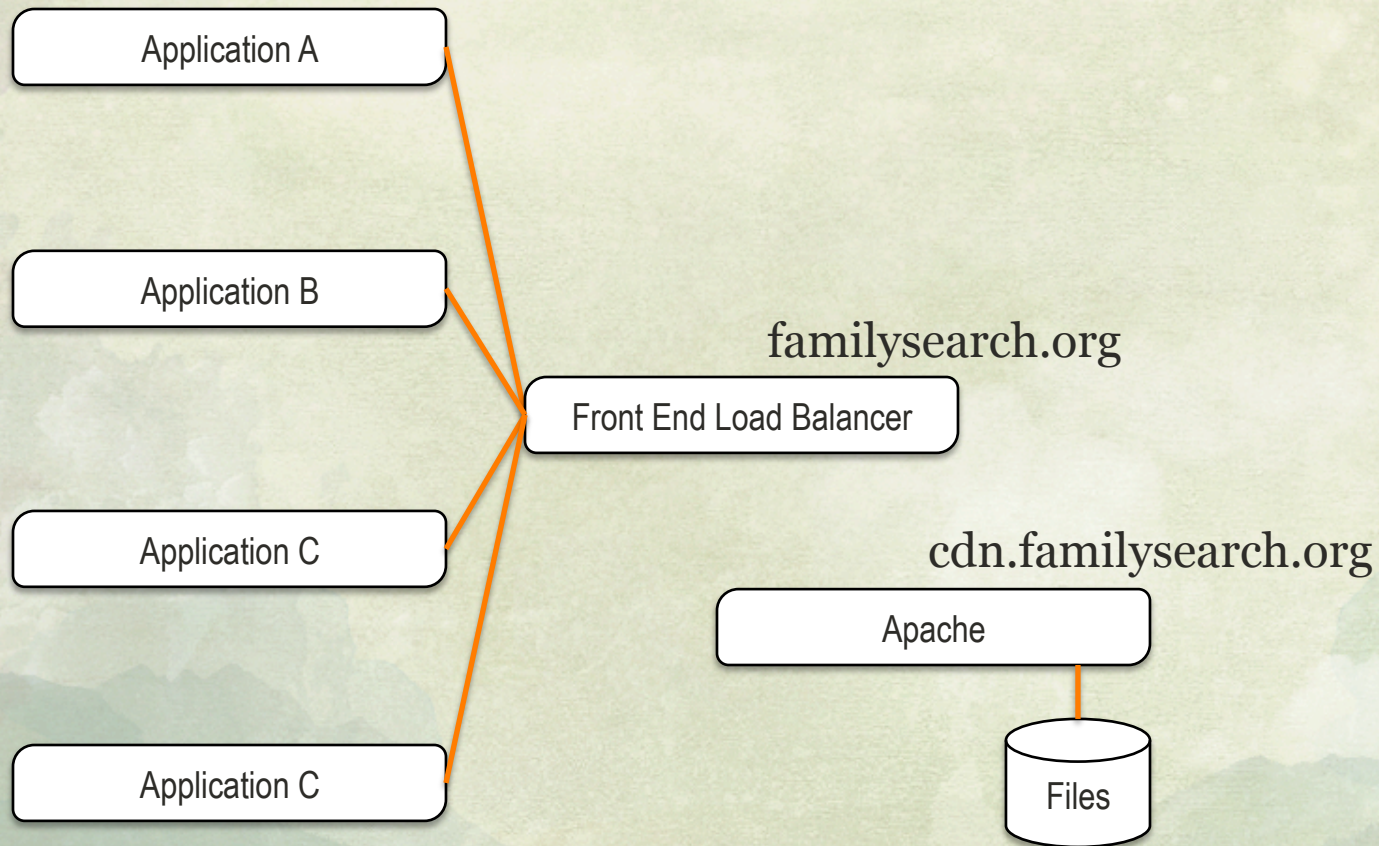
Frameworks

- Grails
- Enunciate
- Vend
- Drupal
- Spring
- Wicket
- XMLC
- Struts
- Node.js
- etc...

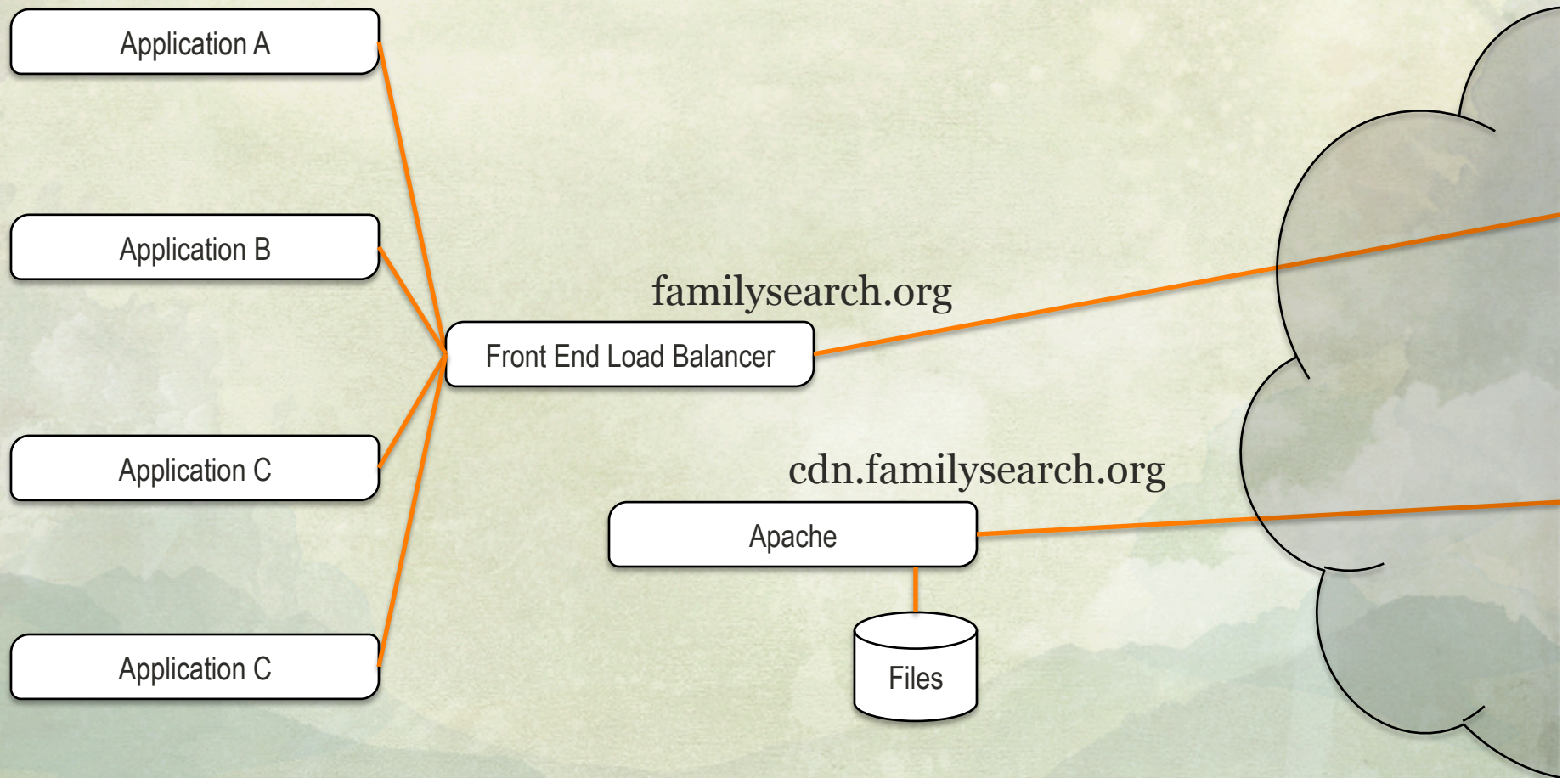
Out of the framework and into the platform



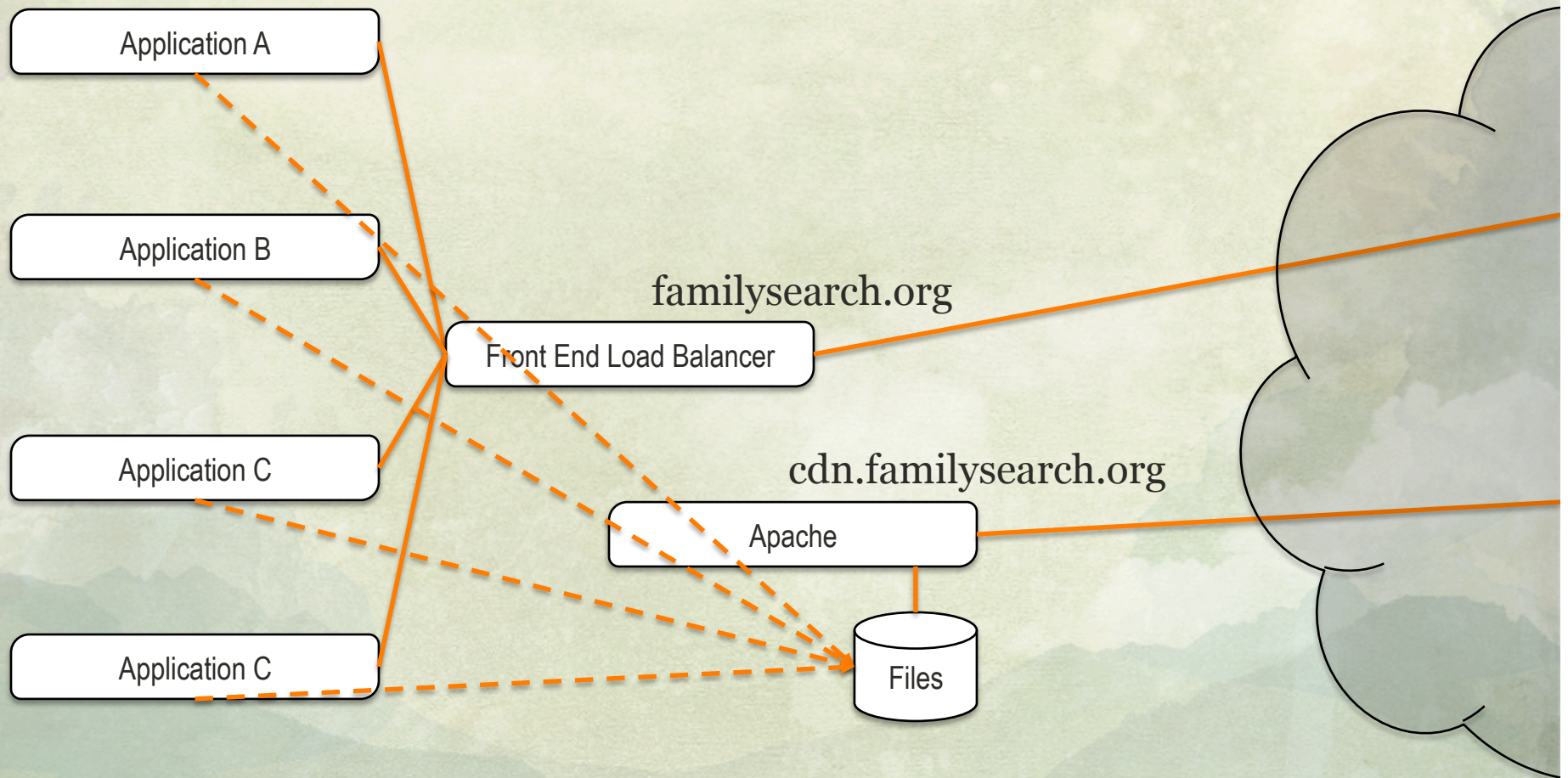
Towards a CDN



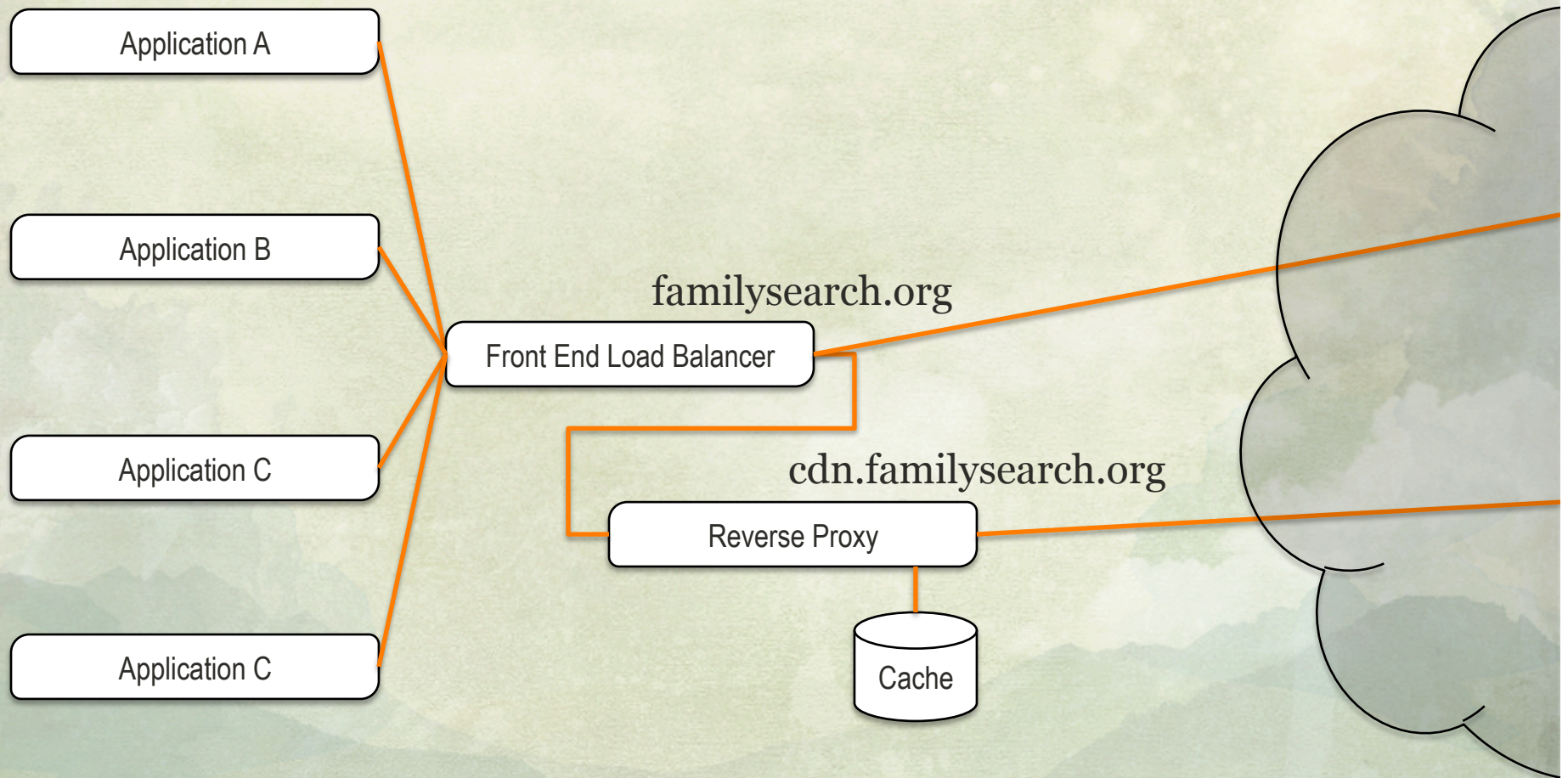
Towards a CDN



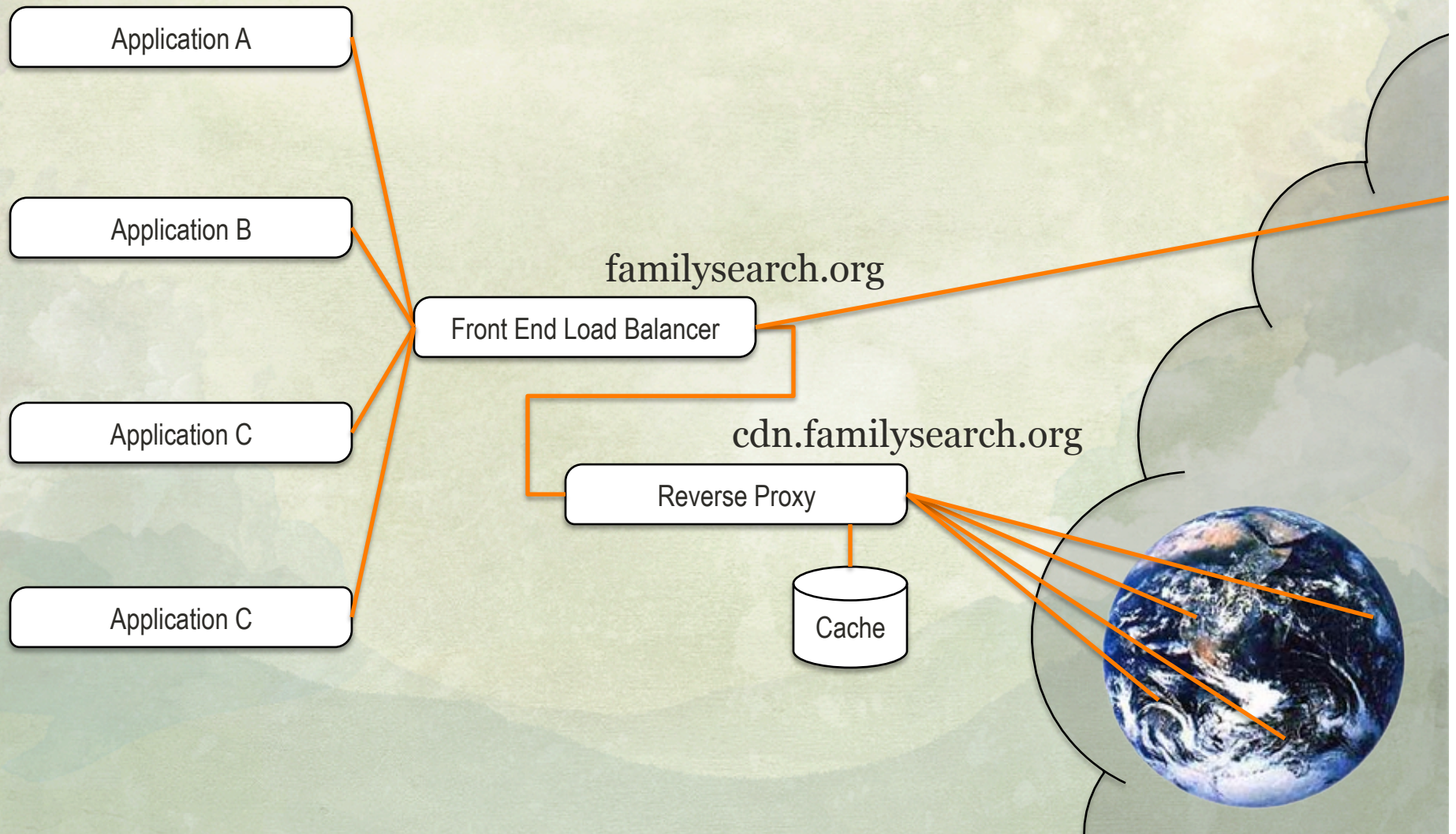
Towards a CDN



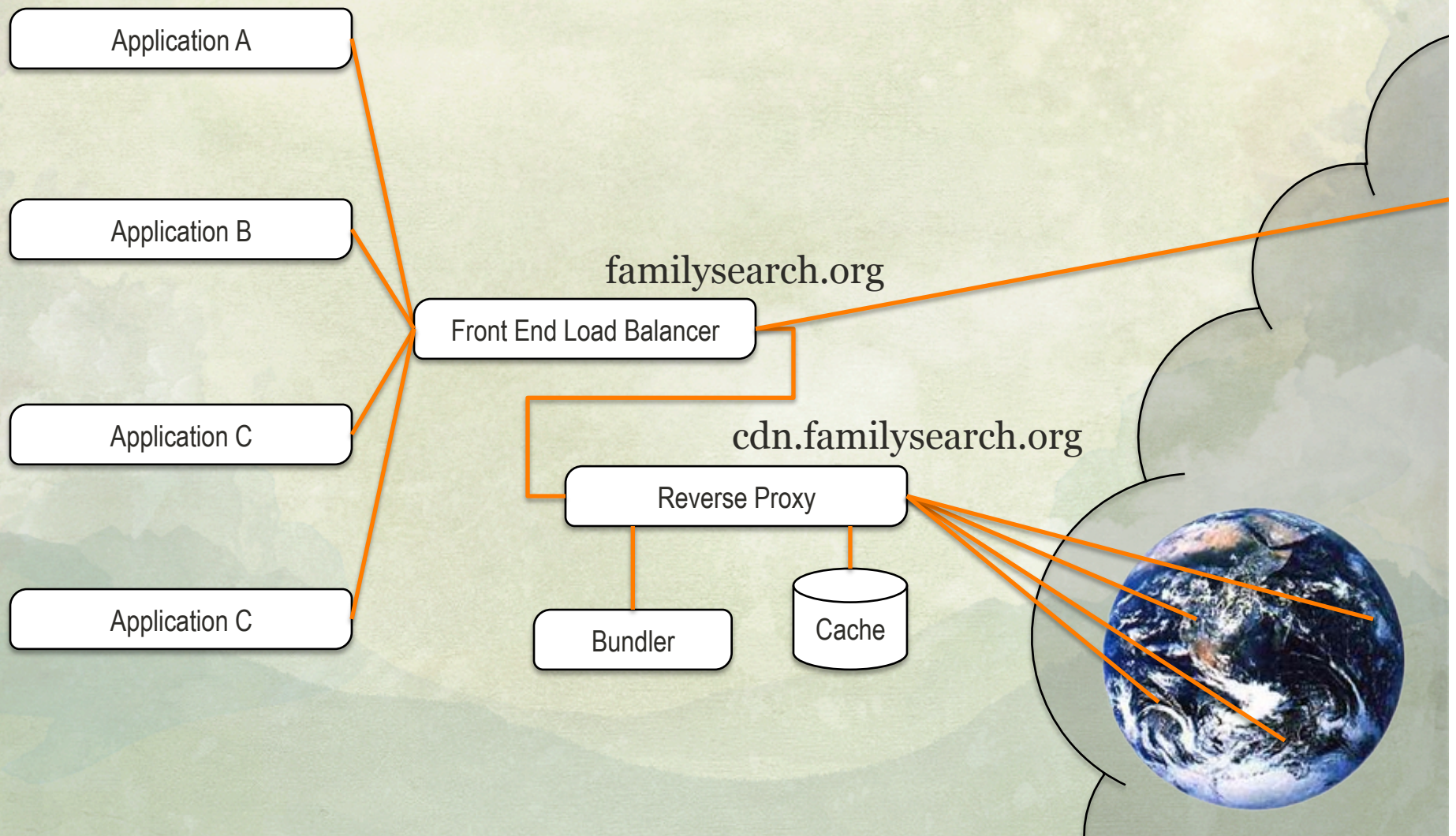
Reverse CDN



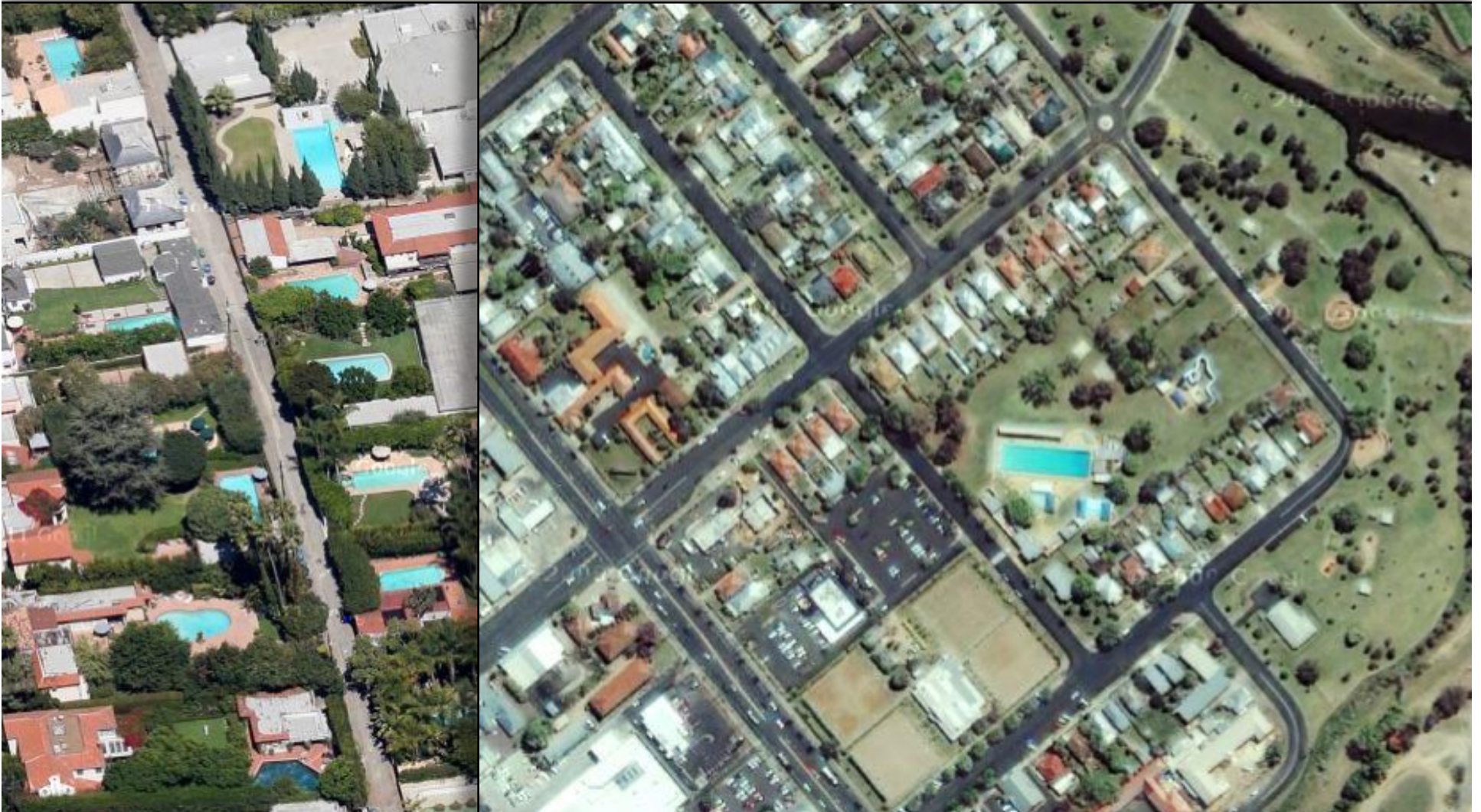
Complete CDN



JavaScript and CSS Bundling



Out of the framework and into the platform



REST

FIELDING REST RFC
2616
HAS
A
POSSE



Web Framework Requirements

- A good, cache aware HTTP/REST server side client

Web Framework Requirements

- A good, cache aware HTTP/REST server side client

The Choice becomes less architectural

The background is a soft watercolor wash in shades of yellow, green, and blue. In the lower portion, there is a dark silhouette of a mountain range. On the right side of the foreground, a family of four (two adults and two children) stands on a grassy hill, looking out over the landscape. A single, detailed evergreen tree stands to the left of the family. The text 'FAMILY SEARCH' is centered in the upper half, with a stylized tree logo integrated into the letter 'Y'.

FAMILY SEARCH