Domino iQ
**What to Expect,
First Steps and Use Cases**

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Upgrade your time

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Before We Start

panagenda

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Domino iQ – What to Expect

▶ What is an LLM?
   ▶ EU AI Act

▶ What is Domino IQ?

▶ Domino IQ
   • Configuration
   • Use cases

What is an LLM?

What is an LLM?

- A Large Language Model (LLM) is an advanced AI system trained on massive text data to understand and generate human-like language

- It can answer questions, summarize text, write creatively & assist with tasks using natural language

- LLMs are trained on vast amounts of text data, such as books, articles, and websites
  - This helps them understand grammar, context, and even nuances of different languages

What is an LLM?: Which one to choose for Domino IQ?

- Functionality highly depends on the right choice of LLM

- The larger the model the better the replies. But larger models also require much more CPU/GPU resources

- It does not make sense to ship models with Domino IQ
  - Models are fast changing and depend on our needs
  - There are base models customized for different needs and different sized GPUs

EU AI Act

Why is the EU AI Act Important?

Mandatory AI Training

- The EU AI Act requires companies to provide compulsory training for all employees working with generative AI.

Compliance Deadline

- Training programs must be implemented by 2 February 2025 to meet regulatory standards.

Ensuring Safe & Responsible Use

- The aim is to guarantee that staff can safely manage AI, minimizing risks and ensuring legal certainty.

Why is the EU AI Act Important?

Operational Readiness

- Companies must integrate training strategies.

Risk Reduction

- Improved training reduces liability risks and potential data protection breaches.

Competitive Advantage

- By ensuring skilled usage of AI, Domino IQ can optimize processes and maintain a market edge.

What is the EU AI Act?

The **EU AI Act** is a **regulatory framework (law)** established by the European Union to govern artificial intelligence (AI) technologies. It aims to **prohibit certain high-risk AI applications**, such as social scoring systems, while implementing strict **governance, risk management, and transparency requirements** for others. The Act classifies AI systems based on their risk levels, with **unacceptable risks being prohibited** and most regulations focusing on **high-risk AI systems**. It came into force on **August 1, 2024**, and is designed to foster responsible AI development while addressing potential risks to citizens' health, safety, and fundamental rights.
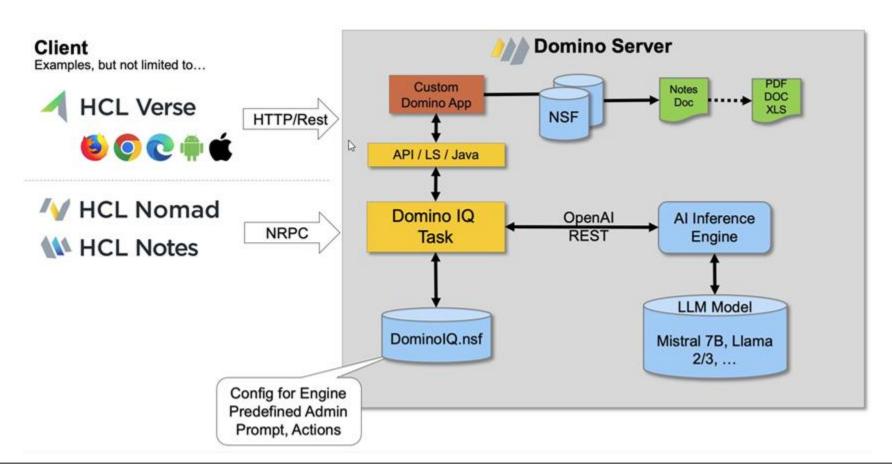
What is Domino iQ

What is Domino iQ?

- **Domino integrated** AI implementation
  - Use of standard Large Language Model (LLM)
  - Runs LLM of "your choice" <u>locally</u>
  - **No external connection** required at run-time
  - Functionality is integrated into Domino

- **Notes client**/server **integration**
  - Native Notes (NRPC) transaction
  - Lotus Script and Java classes
    - <u>NotesLLMRequest (LotusScript)</u>
    - <u>NotesLLMResponse (LotusScript)</u>

What is Domino iQ?

What is Domino iQ?

- Domino IQ server
  - NRPC "LLM" transaction
  - LLAMA C++ server (the same open-source project Ollama is based on)
  - Domino core connects to LLAMA server via localhost (127.0.0.1)

- Models in GGUF format required

- Need to be downloaded manually into **"llm_models"** directory
  - gguf files are the actual LLM files

- LLAMA supports OpenAI REST API
  - Request type currently implemented:
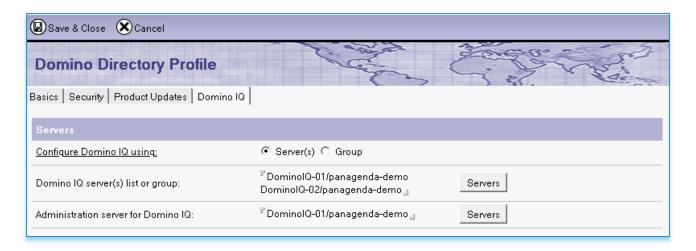   - /v1/chat/completions

Domino iQ - Configuration

Domino IQ configuration (Step 1) – Domino Profile setup

- Global configuration defining all Domino IQ servers in a Domino domain
  - Setup in Domino directory profile (names.nsf)
  - Select administration server
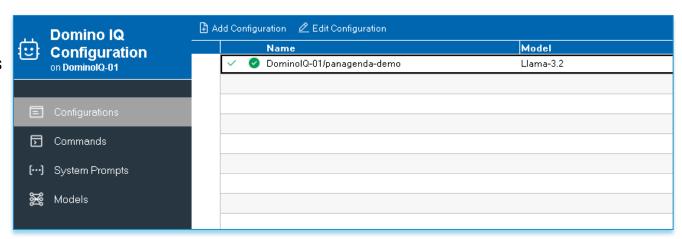 - List of all servers running Domino IQ

Domino IQ configuration (Step 2) – Database setup

- **dominoiq.nsf** (is created by Domino automatically)
  - Configuration database for one or multiple servers
  - Database must exist on each Domino IQ server

- **Contains**
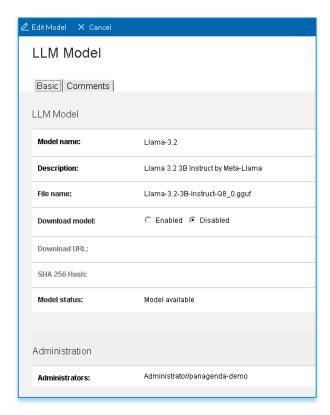 - Configurations
  - Commands
  - System Prompts
  - Models

Domino IQ configuration (Step 2.1) – Database setup

- **Model**
  - Auto-download and manage GGUF-format LLM models in Domino IQ via an "LLM Model" document in dominoiq.nsf
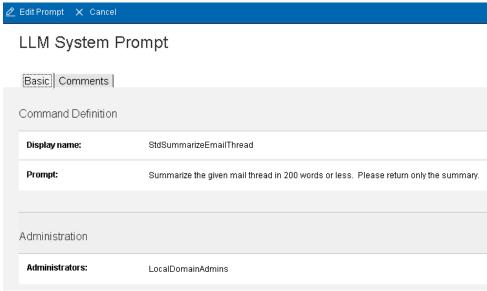
Domino iQ: A classification

Domino IQ configuration (Step 2.2) – Database setup

- **System Prompts**

  – Define a "System Prompt" document
    that directs the Domino IQ AI inference
    engine—using a chosen LLM—to frame
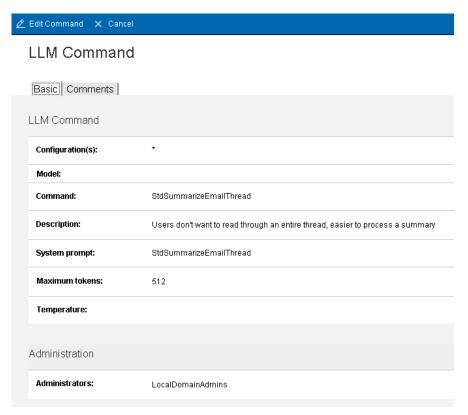   queries and generate the correct
    responses.

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Domino IQ configuration (Step 2.3) – Database setup

- **Commands**

  – Map LLM system prompts to Domino IQ servers by adding an "LLM Command" document in dominoiq.nsf, specifying which servers support the prompt (and optional model settings).
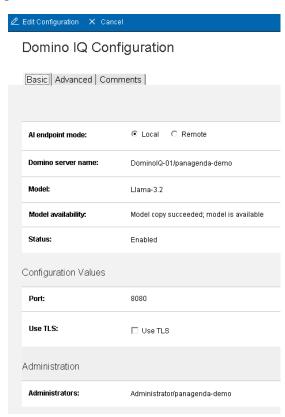
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Domino IQ configuration (Step 2.4) − Database setup

- **Configuration**

  - Define a "Domino IQ Configuration" document in dominoiq.nsf to associate a Domino server with an LLM model and configure its local AI inference endpoint (port, TLS, and tuning parameters).

Domino iQ: A classification

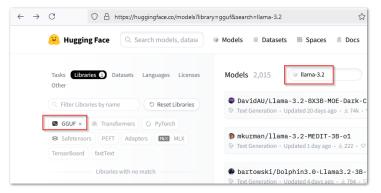## Domino IQ configuration (Step 2.5) – Database setup

- **Configuration (remote)**

  – Create a "Domino IQ Configuration" document
    in Remote mode to link a Domino server with
    an externally hosted LLM endpoint for AI inference.

Domino iQ: A classification

Domino IQ configuration (Step 3) – Model download

Download the LLM of your choice:
(huggingface.co is the biggest HUB of LLMs today)

LLM files can be in different format

-Domino IQ (LLAMA server) requires a the GGUF format

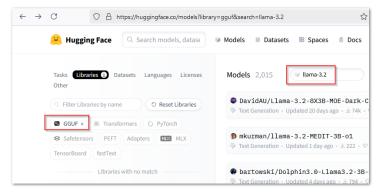-There is a UI option to select LLMs available as a GGUF file

Model files can be converted to GGUF

-For a first test you should stay away from conversions…

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Domino IQ configuration (Step 3.1) – Model download

Download the LLM of your choice:
(huggingface.co is the biggest HUB of LLMs today)

Example search

- https://huggingface.co/models?library=gguf&search=llama-3.2

- HCL recommends the following model as a first step
  - https://huggingface.co/lmstudio-community/Llama-3.2-3B-Instruct-GGUF

Domino IQ (Sidestep which model and why)

Why Specialized LLMs + Top Use-Cases

- **Precision**
  Domain-tuned for accurate, relevant outputs

- **Efficiency**
  Smaller, focused models run faster and cheaper

- **Reliability**
  Fewer hallucinations and built-in guardrails

- **User Fit**
  Tailored responses that need minimal editing

Domino iQ: A classification

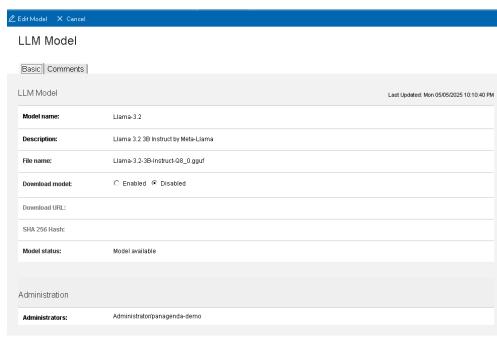**Domino IQ (Sidestep which model and why)**

- **Categories & Preferred Models**

  - **Conversational Agents & Chatbots**
    WizardLM 2 7B (lmstudio-community/WizardLM-2-7B-GGUF)
  - **Content Creation & Creative Writing**
    phi-4 (lmstudio-community/phi-4-GGUF)
  - **Summarization & Abstraction**
    Meta-Llama 3.1 8B Instruct (lmstudio-community/Meta-Llama-3.1-8B-Instruct-GGUF)
  - **Code Generation & Programming Assistance**
    CodeLlama 7B KStack (lmstudio-community/CodeLlama-7B-KStack-GGUF)
  - **Translation & Localization**
    EuroLLM 9B Instruct (lmstudio-community/EuroLLM-9B-Instruct-GGUF)

Domino iQ: A classification

Domino IQ configuration (Step 4) – Model configuration

- **LLM Model**
  - Name of the model
  - Short description
  - **GGUF** model filename on disk
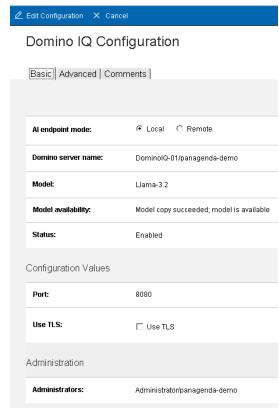   - Make sure there is no blank at the end

  GGUF files must be placed here (**/DOMINODATA/llm_models**)

Domino iQ: A classification

Domino IQ configuration (Step 5) – Server configuration

- Per Domino IQ server configuration document

- Sets the model used by the Domino IQ Server
  by model name defined in the model document

- Port configuration for the localhost connection
  – Standard ports should work
  – Optional TLS connection
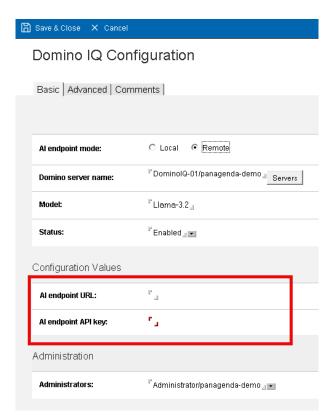
Domino iQ: A classification

Domino IQ configuration (Step 5.1) – Remote Server configuration

- URL to your external LLM Server

- API Key to connect to the LLM server

- Generate a secure key value manually
  – Used as Bearer token for the REST API
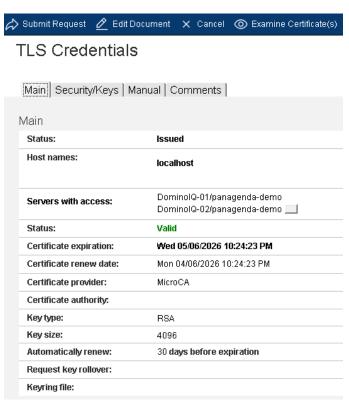 – Passed to LLAMA server at startup

  Remember

  – Request type currently implemented:
    /v1/chat/completions

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Domino IQ configuration (Step 6) – TLS configuration (optional)
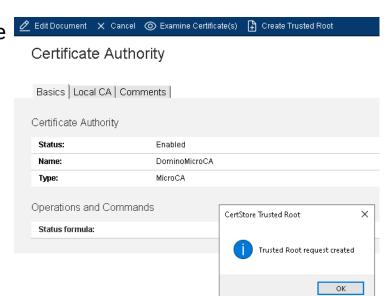
- TLS is usually not required for a local connection
  - **Tip: Start without TLS for functional testing**

- Domino IQ fully supports TLS
  - Can use CertMgr TLS Credentials
  - CertMgr now supports "**localhost**"
  - MicroCA can now be used to create a **localhost** Certificate
  - Set "Servers with access" to all Domino IQ servers

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*pan*agenda

Domino IQ configuration (Step 6.1) – TLS configuration (optional)

- LLAMA Server listens on TLS port
  - Domino IQ opens a client connection

- Cross cert is needed to trust the server certificate

- New "Create Trusted Root" action
  - Implemented in template logic
    - Creates a new trusted root document
    - Copies the root certificate
    - Submits the request
    - CertMgr server processes request

Edit Document   ✕ Cancel   👁 Examine Certificate(s)   Create Trusted Root

Certificate Authority

Basics | Local CA | Comments

Certificate Authority

Status:	Enabled
Name:	DominoMicroCA
Type:	MicroCA

Operations and Commands

Status formula:

CertStore Trusted Root   ✕

ⓘ Trusted Root request created

OK

Domino iQ: A classification

Domino IQ good to know

Documentation:

- https://help.hcl-software.com/domino/14.5.0/admin/domino_iq_server.html

Troubleshooting tips

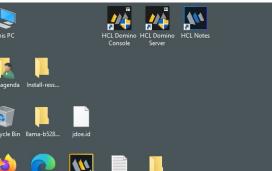- https://help.hcl-software.com/domino/14.5.0/admin/conf_iq_troubleshooting_tips.html

Development

- https://help.hcl-software.com/dom_designer/14.5.0/basic/H_NotesLLMRequest_Class.html
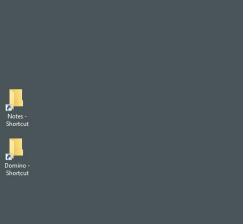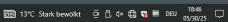- https://help.hcl-software.com/dom_designer/14.5.0/basic/H_NotesLLMResponse_class.html

Domino iQ - Use cases

A few ideas

Domino iQ: A classification

Use Cases - Boosting Productivity

- Summarize long email threads automatically

- Generate smart auto-replies

- **Translate email conversations on demand**

- Highlight tasks from meeting notes

- Suggest relevant reply options based on content

Domino iQ: A classification

Use Cases - Boosting Productivity

- Support intelligent filing with SwiftFile enhancements

- Auto-forward emails based on detected topics

- Detect spam and phishing via AI analysis

- **Categorize and prioritize emails automatically**

- Generate follow-up reminders from email context

Use Cases - Smarter Customer Engagement

- Automatically classify and segment customers

- Predict customer behavior and purchase likelihood

- **Recommend follow-up actions based on customer history**

- Analyze sentiment in customer emails and feedback

- Detect sales opportunities through AI pattern recognition

Domino iQ: A classification

Use Cases - Smarter Customer Engagement

- **Search customer-related documents intelligently**

- Provide personalized dashboards and reports

- Auto-generate customer insights and reports

- Validate and clean customer data (e.g., duplicates)

- Transcribe and analyze customer calls via speech recognition

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Use Cases - Optimized Operations with Proactive Administration

- Detect unusual server loads via anomaly detection

- **Get AI-based recommendations from log file analysis**

- Optimize system resources like RAM and CPU

- Identify potential security vulnerabilities

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Use Cases - Optimized Operations with Proactive Administration

- **Automatically deactivate orphaned user accounts**

- Receive smart update suggestions

- Predict maintenance needs ahead of time

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Use Cases - Accelerating Development

- Generate workflows and reports automatically

- Track and visualize document version history

- **Suggest pseudocode or generate code based on logic**

- Complete, review, and test code intelligently

- Enhance Domino Designer help with AI context

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Use Cases - Accelerating Development

- Search and summarize design elements or code

- Extract structured info from emails and documents

- Process PDFs with OCR and validation

- Analyze and optimize code quality

- Auto-generate test cases

- **Predict and prevent code-level issues**

Domino iQ: A classification

Let´s summarize

- **Domino iQ is easy to configure**

- **Domino iQ is not a ChatGPT for Domino**

- **Domino 14.5 is the first step**

- **Consider what possibilities you might have with Domino iQ**

- **Train your employees and colleagues**

THANK YOU!

Q&A

Your Feedback Matters to Us

WEBINAR

Serie: Die neuesten Innovationen von HCL

Notes 14.5
Licht ins Dunkel der neuen Version bringen

Sprecher

Marc Thomas
Senior Solutions Architect & HCL Ambassador
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