Business Quickstart Guide

Until recently, our focus at Numenta was on technology research and development, starting with the articulation of the theory of Hierarchical Temporal Memory (HTM), a biologically based theory of intelligence that we believe lays the groundwork for a new era of machine intelligence. The body of work we've developed since our founding builds on HTM theory through a set of learning algorithms, a group of supporting software components, several software applications, and an intellectual property portfolio.

We are now is in the early stages of commercializing this technology. If you are interested in working with us, this Guide will help you get started. We will update this Guide as our commercial programs evolve.

Our Business Model

Our intent is to broadly license the software and intellectual property that we've developed. We believe that HTM can greatly impact the world, and an extensive licensing strategy will enable this technology to be embedded within many different applications. Although we may occasionally bring to market specific software applications that demonstrate the capabilities of HTM (such as Grok for IT Analytics), we are not intending to build out a suite of applications that require deep domain knowledge. Consequently, if you are interested in developing a specific application that could make use of Numenta machine intelligence, we welcome your inquiry.

Getting Started

The table below provides an overview of the different deployment models for Numenta technology. Details on these models are included in the next sections of this Guide.

Deployment Model	When to Use	Available Resources
Commercial product using Grok Custom Metrics	• Desire an anomaly detection solution that requires little to no programming expertise • Ability to deploy through AWS • Data streams are discreet and can be sampled at or aggregated to five minute increments	• Free Grok Download on AWS Marketplace • Grok Master Installation and User Guide • Grok Custom Metrics Support Guide • Other Grok Documentation • Custom license when scale exceeds 250 instances
Custom development and deployment for anomaly detection	• Require deployment outside of AWS • Data streams are discrete and can be sampled at or aggregated to five minute increments • Desire for a custom interface or to integrate Grok capabilities into other products • Have internal programming resources that are relatively self sufficient	• Custom software license • Limited technical support available
Custom development and deployment for other applications	• Data characteristics do not fit Grok requirements • Desire for applications in addition to anomaly detection, such as prediction • Have the internal ability to learn HTM theory and algorithms and to develop software	• NuPIC Open Source Project • Custom software license for commercialization
License Numenta intellectual property for commercial applications	• Desire to develop your own HTM implementations for commercial use rather than starting with NuPIC • Have the internal ability to learn HTM theory and algorithms and to develop software	• Custom license for intellectual property

Deployment Models

1. Deploy through Grok on AWS

The most straightforward way to begin experimenting with our technology is via Grok Custom Metrics, our free commercial product available on the Amazon Web Services Marketplace (EC2 server charges still apply). If the problem you are trying to solve has the following characteristics, then you can use Grok to determine whether our technology is able to perform well on your data.

- Your data is streaming over time.
- You can sample or aggregate the data into 5 minute increments.
- You are monitoring discrete data sources.
- You are looking for anomalies.

Your data could be just about anything, as long as it can be put into numeric form, i.e. sales data, temperature data, performance metrics, web clicks, etc. No data science expertise is required, just a good familiarity with your data sources and an IT resource to manage your AWS instance. Grok Custom Metrics are fully documented and require acceptance of our standard End User License Agreement.

For example, say you have a building management software product, and you want to know if buildings are running at abnormal temperatures. You can stream the data from the buildings into Grok in five minute intervals through Custom Metrics, and read out the results on the Grok mobile client.

Grok is free (except for EC2 server charges) up to 250 instances. If you want to deploy through AWS, but need to track more instances, please get in touch with us below for a separate license.

This deployment model is the simplest, least expensive, and requires no special expertise.

2. License Grok to deploy internally or to integrate into a product

You might not want to deploy Grok using our AWS product for several reasons. First, you might prefer to keep your data behind your own firewall. Second, you may want to integrate this into your own product, such that a custom integration and user interface will be required. In the building management example above, you might want to integrate Grok's anomaly detection right into your product's dashboard.

The following components are available for licensing:

- Source code for the Numenta HTM Engine, including the HTM learning algorithms, SDR encoders, supporting software services
- Source code for the Grok applications, including the mobile application (Android only), the web interface, and a command line interface
- Associated intellectual property

We do not yet have a general licensing program, so each license is custom. Please send an inquiry as detailed at the end of this document.

This deployment model requires standard programming expertise, such as the ability to integrate our technology into your environment. It does not require specialized machine learning expertise to use our algorithms. Please note that at this time, we do not have substantial engineering support resources, so this approach should only be undertaken if your team is self-sufficient.

3. Use NuPIC Open Source under a commercial license

Our core technology and applications are available through our open source project, NuPIC, the Numenta Platform for Intelligent Computing. NuPIC is available under the GPL v3 license. If you have created something using our HTM technology that you would like to keep proprietary, you may transition from the GPLv3 license to a commercial license. Just contact us as detailed at the end of this Guide.

The advantage of building your product on NuPIC is that you have much more flexibility and functionality. Below are some of the additional capabilities that can be accessed through NuPIC but are not available through the other deployment methods today:

- Streaming data at velocities other than five minutes
- Models with multiple metrics
- Automated finding of best models
- Encoders for special data types, such as 2D data
- Prediction, in addition to anomaly detection

The disadvantage of building your product on NuPIC is that it requires much more expertise than starting with the other deployment methods. In order to be able to access the above capabilities in NuPIC, members of your team will need to dedicate some time to learning about HTM and to coming up to speed on the code. It is helpful to have some expertise on the algorithms as well.

4. Intellectual Property license

We have a robust patent portfolio of over 30 patents covering a broad range of components within the HTM theory and applications. We have stated that we will not assert our patents against any non-commercial use of our technology. Moreover, we have made clear that we view our patents to be part of the technology covered under the GPLv3 license in our NuPIC open source project.

We have received inquiries from companies who would like to license this intellectual property to create their own HTM implementations for commercial use. Such licenses are available on a custom basis. Please send us more information below.

Contacting Us

If you would like to explore any of the following scenarios, please contact us here: http://numenta.com/contact/

- Higher capacity license to deploy Grok through AWS
- License of the Grok and HTM software for internal use
- License of the Grok and HTM software to embed in a customer-facing application
- Commercial license for NuPIC
- Intellectual property license

To help us understand your needs, please include the following information:

- Type of license requested
- Application envisioned
    - Product – How do you expect to use HTM?
    - Business – What is the scale of the opportunity you envision?