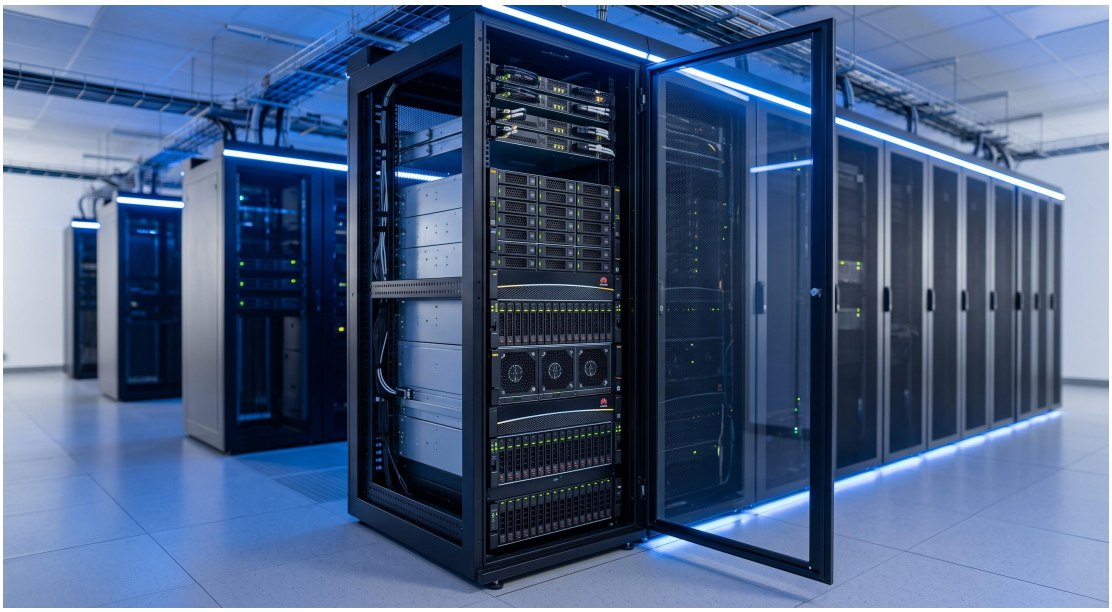
Huawei OceanStor Capacity Planning Tool - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The Huawei OceanStor Capacity Planning Tool represents a comprehensive software-defined planning and forecasting framework embedded within the OceanStor storage ecosystem, engineered to deliver predictive capacity intelligence for enterprise and carrier-grade storage infrastructure. This technical overview details the architectural principles, algorithmic capabilities, and operational specifications of the capacity prediction subsystem integrated into OceanStor Dorado and OceanStor converged storage platforms.

The tool addresses a fundamental operational challenge facing storage administrators: the accurate forecasting of storage capacity consumption to enable proactive resource provisioning, budget optimization, and risk mitigation. By leveraging advanced time-series prediction algorithms and machine learning model ensembles, the Capacity Planning Tool transforms historical capacity telemetry into actionable intelligence regarding future storage requirements.



ARCHITECTURE & CHASSIS DESIGN

The Huawei OceanStor Capacity Planning Tool operates as an integrated software component within the OceanStor operating system environment, requiring no additional hardware appliances or external compute resources for baseline functionality. The architecture comprises three primary functional layers: data acquisition, predictive modeling, and presentation/alerting.

Data Acquisition Layer: The system continuously collects configuration parameters, performance indicators, and alarm information from the storage array and constituent storage pools. This telemetry includes allocated capacity, consumed capacity, LUN-mapped capacity rates, and historical utilization percentages . The data acquisition process operates at scheduled intervals, building a longitudinal capacity profile that serves as the foundation for

predictive analytics.

Predictive Modeling Layer: The core analytical engine employs a multi-model ensemble approach, combining ARIMA (AutoRegressive Integrated Moving Average), fbprophet, and linear prediction models . This ensemble methodology addresses the inherent limitations of single-algorithm prediction, which cannot account for the diverse factors influencing capacity dynamics. The system performs online training using historical data samples to derive measurement indicator statistics and model selection rules .

Presentation Layer: The DeviceManager graphical interface provides access to capacity forecast views, displaying historical consumption trends alongside projected utilization curves . Forecast horizons include one week, one month, three months, six months, and twelve months, subject to sufficient historical data retention .

HARDWARE FEATURES

The Capacity Planning Tool is delivered as an embedded capability of the OceanStor storage system firmware, requiring no discrete hardware components for deployment. However, certain enabling hardware configurations are recommended for optimal functionality.

Storage Controller Requirements: The predictive analytics workload executes within the storage controller’ s compute resources. Modern OceanStor Dorado platforms, equipped with intelligent accelerator cards and storage-class memory (SCM) accelerator cards, provide the computational headroom necessary for deep learning algorithm execution . The system leverages these intelligent chips to build the intelligent storage system and cloud system framework .

Historical Data Retention: The capacity prediction algorithms require sufficient historical monitoring data to generate reliable forecasts. The required retention duration scales directly with the forecast horizon: one week of retention enables one-week forecasts, while twelve-month forecasts necessitate a full year of continuous data collection .

Storage Pool Prerequisite: Capacity forecasting for individual storage pools requires that the pool has been operational for a minimum of seven days prior to forecast generation .

COMPLIANCE & STANDARDS

The Huawei OceanStor Capacity Planning Tool adheres to the following

industry standards and regulatory frameworks applicable to storage management software and telemetry systems:

- SNIA Storage Management Initiative Specification (SMI-S) compatibility for management data exposure
- ISO/IEC 27001 compliant data handling for capacity telemetry and historical records
- Huawei eService security framework for remote diagnostic and planning data transmission
- Enterprise-grade audit logging conforming to financial and healthcare industry requirements
- Support for storage capacity reporting aligned with SNIA Emerald Power Efficiency Measurement standards

TECHNICAL SPECIFICATIONS

The following table summarizes the key operational parameters of the Huawei OceanStor Capacity Planning Tool.

Parameter	Specification
Form Factor	Embedded software component; no discrete hardware

Prediction Algorithm	Multi-model ensemble: ARIMA, fbprophet, Linear Prediction
Forecast Horizon	1 week / 1 month / 3 months / 6 months / 12 months
Minimum Data Retention	7 days (pool forecast); 12 months (annual forecast)
Prediction Outputs	Capacity utilization (%), LUN mapped capacity rate (%), overload warnings
Model Selection	Online training + weighted best model selection
Management Interface	DeviceManager (Insight > Forecast > Capacity)
Supported Platforms	OceanStor Dorado V3/V6, OceanStor 5000/6000, OceanStor Pacific
Redundancy	N/A (software component)
Power Supply	N/A (software component)

ORDERING OPTIONS

The Capacity Planning Tool is a standard embedded feature of OceanStor Dorado V6, OceanStor Dorado V3, OceanStor 5000, OceanStor 6000, and

OceanStor Pacific series storage systems. No discrete SKU or license is required for baseline capacity prediction functionality. Advanced forecasting features including extended horizon prediction (12-month) and multi-model ensemble optimization are enabled through the OceanStor software subscription tier.

For environments requiring centralized planning across heterogeneous storage assets, the Huawei LLDesigner platform provides supplementary hardware configuration and networking planning capabilities . LLDesigner supports BOQ import, LLD document generation, and offline configuration file export, enabling comprehensive pre-deployment planning that complements the operational capacity forecasting provided by the embedded tool .