

# vMTAS Upgrade Information from 1.10.1, 1.11.0, 1.12.0, 1.13.0, and 1.14.0 to 1.15.0

MTAS

## UPGRADE INFORMATION

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# 1 Introduction

This document contains information needed when upgrading the virtualized MTAS from 1.10.1, 1.11.0, 1.12.0, 1.13.0, and 1.14.0 to 1.15.0.

This document is used when planning upgrades on customer sites.

## 1.1 Prerequisites

This section describes the prerequisites which must be fulfilled before the MTAS can be upgraded.

### 1.1.1 Update of Charging System

Update the charging system, if applicable, with the new charging XML files to prepare for the new charging AVPs and enumeration values.

**Note:** Use the described charging system instead of Multi-Mediation (MM) as the MTAS can interact with other types of charging systems.

To perform the charging system update, refer to [MTAS Charging Management Guide](#).

For more details of the XML specifications, refer to the following files:

- [MTAS, Communication Details, 3GPP R7 XML](#)
- [MTAS, Offline Charging, 3GPP R7 MM XML](#)
- [MTAS, Offline Charging, 3GPP R9 MM XML](#)
- [MTAS, Offline Charging, 3GPP R12 MM XML](#)
- [MTAS, Online Charging, 3GPP R7 MM XML](#)
- [MTAS, Online Charging, 3GPP R9 MM XML](#)
- [MTAS, Online Charging, 3GPP R12 MM XML](#)

### 1.1.2 Hardware and Software Required

This section describes the required hardware and software.

**Note:** Later EP deliveries can be used as from state and are found in the Product Revision Information (PRI).



### Network Element Version

This instruction applies to the following Network Elements (NEs):

- vMTAS 1.10.1: CXP2010134/1 R11C05
- vMTAS 1.11.0: CXP2010134/1 R12B17
- vMTAS 1.12.0: CXP2010134/1 R13B09
- vMTAS 1.13.0: CXP2010134/1 R14B10
- vMTAS 1.14.0: CXP2010134/1 R15B12

### Hardware Configurations

The supported Hardware (HW) configurations are as follows:

- vMTAS can run on any hardware supported by the hypervisor.

### From Software Configuration States

- **vMTAS 1.10.1:** CXP2010134/1 R11C05

#### Component Level

- LDEwS, CXP 902 0125/4, R5C01
- LDE BRF SCRIPT, CXP 902 1148/2, R5C01
- Core MW, CXP 902 0355/2, R6C04
- Core MW BRF-C, CXP 901 8859/2, R6C04
- Core MW BRF-EIA, CXP902 4651/2, R6C04
- Trace CC, CXP 902 0582/3, R6A04
- Trace EA, CXP 902 1069/3, R6A13
- COM, CXP 901 8493/2, R5A26
- eVIP, CXP 902 0395/3, R6A67
- SS7 CAF, CXP 902 9429/5, R4A
- SEC\_Cert, CXP 902 7891, R6A
- SEC\_Crypto, CXP 902 7895, R6A
- SEC\_ACS, CXP 902 6450, R6A
- SEC\_LA, CXP 902 6994, R6A



- SEC\_SecM, CXP 902 8976, R5A
  - SEC\_LDAP, CXP 902 8981, R5A
  - LM, CXP9020396/6, R4A
  - LM NELS, CXP9029118/6, R4A
  - LM SA, CXP 902 1377/2, R5A
  - JavaOaM, CXP 902 0490/4, R1A
  - MMAS, CXP 904 0026/6, R3A
  - MMAS JDK, CXP 9040680/6, R3A
  - MMAS Tomcat, CXP 904 0580/6, R3A
  - vDicosEE, CXP9025265/4, R5A63
  - DBS, CXP 902 5264/5, R6C01
  - LEM, CXP9025257/4, R5A69
  - IMS CMCO AAA FW, CXP9023222/1, 1.11.0-2
  - IMS CMCO CTL, CXA1105679/1, 1.10.0-4
  - IMS CMCO IMS FW, CXP9023164/1, 1.11.0-2
  - IMS CMCO REGEX, CXA1105678/1, 1.10.0-4
  - IMS CMCO CMCO utilities, CXP9020686/1, 1.10.1-1
  - IMC CMCO LI, CXP9031413/1 1.7.0-4
- **vMTAS 1.11.0:** CXP2010134/1 R12B17

#### Component Level

- LDEwS, CXP 902 0125/4, R6B02
- LDE BRF SCRIPT, CXP 902 1148/2, R6A01
- Core MW, CXP 902 0355/4, R7B04
- Core MW BRF-C, CXP 901 8859/4, R7B04
- Core MW BRF-EIA, CXP902 4651/4, R7B04
- Trace CC, CXP 902 0582/3, R7A07
- Trace EA, CXP 902 1069/3, R6A13
- COM, CXP 901 8493/7, R6A35



- eVIP, CXP 902 0395/3, R7B01
  - SS7 CAF, CXP 902 9429/6, R4A
  - SEC\_Cert, CXP 902 7891, R7A
  - SEC\_Crypto, CXP 902 7895, R7A
  - SEC\_ACS, CXP 902 6450, R7A
  - SEC\_LA, CXP 902 6994, R6A
  - SEC\_SecM, CXP 902 8976, R6A
  - SEC\_LDAP, CXP 902 8981, R6A
  - LM, CXP9020396/6, R5A
  - LM NELS, CXP9029118/6, R5A
  - LM SA, CXP 902 1377/2, R6A
  - JavaOaM, CXP 902 0490/4, R1A
  - MMAS, CXP 904 0026/6, R3A
  - MMAS JDK, CXP 9040680/6, R3A
  - MMAS Tomcat, CXP 904 0580/6, R3A
  - vDicosEE, CXP9025265/4, R6A177
  - DBS, CXP 902 5264/5, R7A128
  - LEM, CXP9025257/4, R6A170
  - IMS CMCO AAA FW, CXP9023222/1, 1.12.0-3
  - IMS CMCO CTL, CXA1105679/1, 1.12.0-3
  - IMS CMCO IMS FW, CXP9023164/1, 1.12.1-2
  - IMS CMCO REGEX, CXA1105678/1, 1.12.0-3
  - IMS CMCO CMCO utilities, CXP9020686/1, 1.12.0-2
  - IMC CMCO LI, CXP9031413/1 1.7.0-4
- **vMTAS 1.12.0:** CXP2010134/1 R13B09
- Component Level**
- LDEwS, CXP 902 0125/4, R7A24
  - LDE BRF SCRIPT, CXP 902 1148/2, R7A24





- Core MW, CXP 902 0355/4, R8A227
- Core MW BRF-C, CXP 901 8859/4, R8A227
- Core MW BRF-EIA, CXP902 4651/4, R8A227
- Trace CC, CXP 902 0582/3, R8A06
- Trace EA, CXP 902 1069/3, R8A04
- COM, CXP 901 8493/7, R7A20
- eVIP, CXP 902 0395/3, R8A50
- SS7 CAF, CXP 902 9429/6, R5A
- SEC\_Cert, CXP 902 7891, R8A
- SEC\_Crypto, CXP 902 7895, R8A
- SEC\_ACS, CXP 902 6450, R8A
- SEC\_LA, CXP 902 6994, R8A
- SEC\_SecM, CXP 902 8976, R7A
- SEC\_LDAP, CXP 902 8981, R7A
- LM, CXP9020396/6, R5A
- LM NELS, CXP9029118/6, R5A
- LM SA, CXP 902 1377/2, R6A
- JavaOaM, CXP 902 0490/4, R3A
- MMAS, CXP 904 0026/6, R5A
- MMAS JDK, CXP 9040680/6, R5A
- MMAS Tomcat, CXP 904 0580/6, R5A
- vDicosEE, CXP9025265/4, R7A145
- DBS, CXP 902 5264/5, R8A94
- LEM, CXP9025257/4, R7A89
- IMS CMCO AAA FW, CXP9023222/1, 1.12.1-1
- IMS CMCO CTL, CXA1105679/1, 1.12.1-1
- IMS CMCO IMS FW, CXP9023164/1, 1.12.3-4
- IMS CMCO REGEX, CXA1105678/1, 1.12.1-3



- IMS CMCO CMCO utilities, CXP9020686/1, 1.12.1-1
- IMC CMCO LI, CXP9031413/1 1.9.0-1

— **vMTAS 1.13.0:** CXP2010134/1 R14B10

**Component Level**

- LDEwS, CXP 902 0125/4, R7A24
- LDE BRF SCRIPT, CXP 902 1148/2, R7A24
- Core MW, CXP 902 0355/4, R8A227
- Core MW BRF-C, CXP 901 8859/4, R8A227
- Core MW BRF-EIA, CXP902 4651/4, R8A227
- Trace CC, CXP 902 0582/3, R8A06
- Trace EA, CXP 902 1069/3, R8A04
- COM, CXP 901 8493/7, R7A20
- eVIP, CXP 902 0395/3, R8A50
- SS7 CAF, CXP 902 9429/6, R5A
- SEC\_Cert, CXP 902 7891, R8A
- SEC\_Crypto, CXP 902 7895, R8A
- SEC\_ACS, CXP 902 6450, R8A
- SEC\_LA, CXP 902 6994, R8A
- SEC\_SecM, CXP 902 8976, R7A
- SEC\_LDAP, CXP 902 8981, R7A
- LM, CXP9020396/6, R5A
- LM NELS, CXP9029118/6, R5A
- LM SA, CXP 902 1377/2, R6A
- JavaOaM, CXP 902 0490/4, R3A
- MMAS, CXP 904 0026/6, R5A
- MMAS JDK, CXP 9040680/6, R5A
- MMAS Tomcat, CXP 904 0580/6, R5A
- vDicosEE, CXP9025265/4, R7A145



- DBS, CXP 902 5264/5, R8A94
  - LEM, CXP9025257/4, R7A89
  - IMS CMCO AAA FW, CXP9023222/1, 1.12.1-1
  - IMS CMCO CTL, CXA1105679/1, 1.12.1-1
  - IMS CMCO IMS FW, CXP9023164/1, 1.12.3-4
  - IMS CMCO REGEX, CXA1105678/1, 1.12.1-3
  - IMS CMCO CMCO utilities, CXP9020686/1, 1.12.1-1
  - IMC CMCO LI, CXP9031413/1 1.9.0-1
- **vMTAS 1.14.0:** CXP2010134/1 R15B12

#### Component Level

- LDEwS, CXP 902 0125/4, R9A25
- LDE BRF SCRIPT, CXP 902 1148/2, R9A25
- Core MW, CXP 902 0355/4, R10D03
- Core MW BRF-C, CXP 901 8859/4, R10D03
- Core MW BRF-EIA, CXP902 4651/4, R10D03
- Trace CC, CXP 902 0582/3, R10A08
- Trace EA, CXP 902 1069/3, R10A08
- COM, CXP 901 8493/7, R9A20
- eVIP, CXP 902 0395/3, R10A46
- SS7 CAF, CXP 902 9429/6, R7A100
- SEC\_Cert, CXP 902 7891, R10A
- SEC\_Crypto, CXP 902 7895, R10A
- SEC\_ACS, CXP 902 6450, R10A
- SEC\_LA, CXP 902 6994, R10A
- SEC\_SecM, CXP 902 8976, R9A
- SEC\_LDAP, CXP 902 8981, R9A
- LM, CXP9020396/6, R8A59
- LM NELS, CXP9029118/6, R5A



- JavaOaM, CXP 902 0490/4, R4A
- MMAS, CXP 904 0026/6, R6A
- MMAS JDK, CXP 9040680/6, R6A
- MMAS Tomcat, CXP 904 0580/6, R6A
- vDicosEE, CXP9025265/4, R9A140
- DBS, CXP 902 5264/5, R10A83
- LEM, CXP9025257/4, R9A75
- IMS CMCO AAA FW, CXP9023222/1, 1.15.1-1
- IMS CMCO CTL, CXA1105679/1, 1.15.1-1
- IMS CMCO IMS FW, CXP9023164/1, 1.15.1-1
- IMS CMCO REGEX, CXA1105678/1, 1.15.0-3
- IMS CMCO CMCO utilities, CXP9020686/1, 1.15.1-1
- IMC CMCO LI, CXP9031413/1 1.10.0-1

#### To Software Configuration States

— vMTAS 1.15.0 : CXP2010134/1 R16C04

##### Component Level

- LDEwS, CXP 902 0125/4, R9A25
- LDE BRF SCRIPT, CXP 902 1148/2, R9A25
- Core MW, CXP 902 0355/4, R11C02
- Core MW BRF-C, CXP 901 8859/4, R11C02
- Core MW BRF-EIA, CXP902 4651/4, R11C02
- Trace CC, CXP 902 0582/3, R11A05
- Trace EA, CXP 902 1069/3, R11A01
- COM, CXP 901 8493/7, R10A24
- eVIP, CXP 902 0395/3, R11B02
- SS7 CAF, CXP 902 9429/6, R8A72
- SEC\_Cert, CXP 902 7891, R11A
- SEC\_Crypto, CXP 902 7895, R11A



- SEC\_ACS, CXP 902 6450, R11A
- SEC\_LA, CXP 902 6994, R11A
- SEC\_SecM, CXP 902 8976, R10A
- SEC\_LDAP, CXP 902 8981, R10A
- LM, CXP9020396/6, R9B02
- LM NELS, CXP9029118/6, R5A
- JavaOaM, CXP 902 0490/4, R4A
- MMAS, CXP 904 0026/6, R7A
- MMAS JDK, CXP 9040680/6, R7A
- MMAS Tomcat, CXP 904 0580/6, R7A
- vDicosEE, CXP9025265/4, R9B03
- DBS, CXP 902 5264/5, R10A83
- LEM, CXP9025257/4, R9A75
- IMS CMCO AAA FW, CXP9023222/1, 1.16.0-3
- IMS CMCO CTL, CXA1105679/1, 1.16.3-3
- IMS CMCO IMS FW, CXP9023164/1, 1.16.1-1
- IMS CMCO REGEX, CXA1105678/1, 1.16.0-3
- IMS CMCO CMCO utilities, CXP9020686/1, 1.16.0-3
- IMC CMCO LI, CXP9031413/1 1.12.2-1

### 1.1.3

#### Documents

Before starting this procedure, ensure that the following information or documents are available:

- Information (facts) as, node name, software version, platform, operating system, and hardware.
- Information about IP addresses, usernames and passwords, how to collect data and log files, refer to [Data Collection Guideline for MTAS](#).
- Information about the Ericsson Command-Line Interface (ECLI), refer to [Ericsson Command-Line Interface User Guide](#).
- Information about the Managed Object Model (MOM), refer to [Managed Object Model \(MOM\)](#).



- Some of the recovery steps require physical access to the nodes for pressing buttons, replacing hardware, and so on. For information on physical access and handling, refer to [MTAS Health Check](#).

#### 1.1.4 Tools

The following tools must be available before performing any procedure in this document:

- A workstation (laptop) with SSH and SCP or FTP client
- A NETCONF browser

#### 1.1.5 Conditions

The following conditions must be met:

- The upgrade is supported with a 30% average CPU load traffic limit on the Payload Blades.
- Signalling Manager is closed before the upgrade.
- An Ericsson Command-Line Interface (ECLI) session in Exec mode is in progress.
- Subscriber Data query, purge operations, or ongoing charging backup are not supported during the upgrade.
- The user who is responsible for upgrade related activities has all rights to perform the necessary commands both in Linux® and in ECLI.
- The `SystemTroubleshooter` role is assigned to the user, refer to [Set User Roles for User Account](#).
- The `system-ts` group is added to `sudo`, refer to [MTAS Hardening Guide](#).
- The `Mtas_Application_Administrator` role is assigned to the user, refer to [Sections MTAS Roles and Rules and Types of Operation in User Management](#).

#### 1.1.6 Prerequisites for Upgrading MTAS with Network Redundancy

1. The IMS network must be configured for AS failover. That is the AS FQDN has to have at least two DNS entries, one per used MTAS. For information on how to configure MTAS for Dynamic Allocation, refer to [sections Configuration for Dynamic Allocation and DNS Based Redundancy and Load Sharing of External Server Nodes in MTAS External Network Configuration](#).
2. Verify that the intended secondary MTAS nodes are operational by following the MTAS Health Check procedure, refer to [MTAS Health Check](#).



3. Verify that the intended secondary MTAS nodes are configured properly, meaning that the suggested number of Sh, Rf, and Ro Diameter applications connections towards each Diameter application peer node is equal to the minimum number of Traffic Processors – between MTAS and the Peer Node.

## 1.2 Limitations

During the upgrade, the following known limitations exist:

- Provisioning is not allowed, as configuration changes during upgrade can cause problems.
- AppTrace is not supported.
- Data collection is not supported.

**Note:** During the upgrade procedure at the beginning of the activation step, the AppTrace and data collection is turned off automatically.

Data collection jobs are restored automatically at the end of the activation step.







## 2 Upgrade Overview

This section describes the upgrade, and a possible rollback, from an impact point of view.

### Lead Time

For information about lead times (minutes) for the MTAS upgrade, see Table 1 and Table 2.

Table 1 Overall Lead Time for MTAS Upgrade without Network Redundancy

|              | 2+2        | 2+4         | 2+10        |
|--------------|------------|-------------|-------------|
| Pre-Upgrade  | 60 minutes | 60 minutes  | 60 minutes  |
| Upgrade      | 60 minutes | 120 minutes | 220 minutes |
| Post-Upgrade | 30 minutes | 30 minutes  | 30 minutes  |

Table 2 Overall Lead Time for MTAS Upgrade with Network Redundancy

|                        | 2+4        | 2+10       |
|------------------------|------------|------------|
| Pre-Upgrade            | 60 minutes | 60 minutes |
| Upgrade <sup>(1)</sup> | 40 minutes | 40 minutes |
| Post-Upgrade           | 30 minutes | 30 minutes |

(1) If there is network redundancy, the time can increase with 15-30 minutes since the graceful shutdown of the MTAS depends on ongoing calls.

### Down Time

No down time is expected during the MTAS upgrade without Network Redundancy.

If there is Network Redundancy, the secondary MTAS node handles the traffic. The primary MTAS node can be upgraded once its `mtasFunctionAdministrativeState` attribute is changed to a LOCKED state, for example, when no traffic is running on the node. The LOCKED state can be reached the following ways:

- Gracefully, for example, waiting for the last call to finish
- Forcefully, for example, terminate the ongoing calls

### Traffic Loss

During the MTAS upgrade without Network Redundancy, the following traffic loss is expected:



- Rejected traffic: None

Three Party (3PTY) sessions and conferences are lost.

- Disconnected traffic: None

### **Service Disturbances**

Stable calls stay connected during the MTAS upgrade without Network Redundancy.

## **2.1 Impact of Upgrade**

This section describes the impact of the upgrade.

### **Operation and Maintenance**

The upgrade has the following impact on the operation and maintenance of the system:

- Alarms

There are no alarms.

- Counters

The error counters are expected to increase during the upgrade.

### **Provisioning**

Provisioning is not supported during the upgrade.

### **Charging**

No impact.

### **Security**

Security is not treated in this document.

### **End Terminals**

No impact.

### **Database Handling**

No impact.



### **Dependencies to Other Nodes**

This subsection describes the impact on the dependencies to other nodes during the upgrade.

For more information on new, modified, obsolete, or temporary parameters during the upgrade, refer to [vMTAS Network Impact Report](#).

### **Other Impacts**

No other impacts.

## **2.2 Impact of Rollback**

This section describes the impact of a possible rollback, in case the upgrade is not concluded in a satisfactory manner.

When restoring the backup, a cluster reboot is automatically triggered.

### **Traffic Loss**

Traffic loss is expected during the cluster reboot, unless upgrade is performed with Network Redundancy.

### **Service Disturbances**

Service disturbance is expected during the cluster reboot, unless upgrade is performed with Network Redundancy.

### **Provisioning**

Provisioning is not supported during the upgrade.

### **Charging**

Charging information is not generated during the cluster reboot.

### **Security**

Security is not treated in this document.

### **End Terminals**

No impact.

### **Database Handling**

No Impact.



### **Rollback Dependencies on Interaction with Other Nodes**

The rollback has no impact on the external interfaces.

The rollback has no impact on the backward compatibility.

**Note:** Roll back any attribute modification performed on other nodes in preparation for the upgrade, to prevent possible conflicts.

### **Other Impacts**

No impact.



## 3 Parameter Changes

For information on new, modified, obsolete, or temporary parameters during the upgrade, refer to [vMTAS Network Impact Report](#).